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## ORIGINAL ARTICLES.

### THE RADICAL CURE OF HERNIA.<sup>1</sup>

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It is impossible to view the present methods and results of the operative treatment of hernia in the true perspective without a brief survey of the past, stopping here and there for a moment to note the more important landmarks. The historical picture presented shows that its evolution has not been a gradual and harmonious development, but rather a series of brilliant conceptions based on more or less sound anatomical principles. At one time these were found commanding the respect and confidence of the leading masters of surgery of the day, and at another relegated to quacks and traveling rupture-curers, who alone kept them from falling into utter oblivion, until, under the new stimulus caused by the great discoveries of anesthesia and antisepsis, they were again revived and elaborated.

While we find occasional references to hernia and its treatment in the writings of the early Greeks, the first recorded description of an attempt to cure the condition by operation was made by Celsus, a Roman, who lived during the first half of the First Century, A.D., and to him must be given the honor of being the founder of the radical cure of non-strangulated hernia. His operation consisted in a free open incision over the hernial tumor, exposure of the sac, and probably the removal of the whole or a part of the sac. If the omentum was present it was pushed back but if irreducible, a needle was passed through the middle and it was then tied off in two portions. The wound was then closed by sutures. The testis was not removed and care was taken not to injure the cord in the dissection of the sac. The operation was confined to children under six years of age.

Heliodorus, who flourished under Trajan at the beginning of the Second Century, has given us a description of a method of operation for hernia which actually surpasses many that are now offered to the profession as new and ideal. He says, "We must cut out the hernial sac with great care for, if you take away less than is protruded, the result will be the

production of a new hernia. In order, therefore, that we may not miss excising an amount that is precisely correct it is necessary to draw the sac outward by catching the tip. So soon as the edges of the abdominal wound begin to be everted, enough of the peritoneum has been drawn out and so much is to be excised. When just enough peritoneum has been drawn out the sac is to be twisted. Having been cut off along a straight line the peritoneum becomes folded upon itself, and screwed up and closed so tight that not even the point of a probe can be introduced."

A few centuries later this operation had been abandoned and forgotten.

Paul of Ægina in the Seventh Century, following in many points the method of Celsus, introduced a new and radical step, *vis.*, castration. Without attempting to separate the cord from the sac he transfixed the sac with a "large-sized needle containing a double thread." This thread was then cut and the ends crossed like the great letter X and tied. The portion below the ligature, with the testis and cord, was then cut away. It seems difficult to understand how this method so inferior to the methods of Celsus and Heliodorus should have survived almost to modern times, while the former were so soon forgotten.

During the Middle Ages many new methods were introduced. Castration was still performed though, according to William of Salicetus, only by traveling rupture-curers and foolish physicians. Of the other methods the principal ones were: (1) Exposure of the sac and closure by various forms of ligature. (2) Inclusion of the sac and scrotum either by needles or by sutures. (3) Cauterization applied in various ways. The cure by cautery was known by Paulus and was much employed by the Arabians. It continued in vogue almost to modern times. Full details of the method are found in the writings of Pott.<sup>2</sup> Different writers differed widely as to the extent and depth of the cauterization, but Pott says: "In all of those the exfoliation of the bone is made a necessary part of the process. Eschars and sloughs being separated and the exfoliation cast off the patient is ordered to observe an extremely careful regimen, to lie on his back during the cure and to wear a bandage for some time afterward in order to prevent a new descent of the parts," which notwithstanding all

<sup>1</sup> Address in Surgery delivered before the annual meeting of the Canadian Medical Association, held August 30, 31, and September 1, 1899.

<sup>2</sup> Albert, *Lehrbuch der Chirurg.*, Bd. iii, and Halsted, *Bulletin Johns Hopkins Hosp.*, No. 29, 1893.

<sup>1</sup> Vol. ii, p. 177.

the pains and all the hazard the patient had undergone he was still liable to.

Cauterization by means of strong acids was also employed. During the Eighteenth Century castration became so common, especially in France, that finally stringent laws were passed condemning it. It is not difficult to understand the dire results that not infrequently followed these methods and which finally led to their abandonment.

Such then was the state of the radical cure of hernia at the beginning of the Nineteenth Century. We find an occasional return to ancient methods in the early part of the present century, notably by the Prussian surgeon, Schumaker, and the elder Langenbeck. They made an open incision and dissected the sac from the cord then ligated it as high up as possible. Langenbeck stated that he had performed the operation twelve times with the most successful results. The method, however, did not meet with general approval and does not seem to have been much employed. With the introduction of subcutaneous surgery by Stromeyer in 1835 there followed attempts to apply its principles to the cure of hernia. The most notable examples were the methods of Gerdy and Wützer, and a little later that of John Wood of London, which was a combination of the open and subcutaneous methods. Wood's operation was introduced in England in 1857, and even to recent times was more generally employed than any other, both in Europe and in America. The best results were obtained by Wood himself who claimed a large percentage of cures. The mortality after this method was about seven per cent., though in his later series of cases it was reduced very considerably.

By modern methods we mean those that have been introduced, or rather reintroduced, since the great discoveries of Lister and Pasteur.

In the first place a distinction should be made between operations for strangulated hernia and those deliberately undertaken for the purpose of effecting a radical cure. Strange as it may seem the operation for strangulated hernia is of much more recent origin than that for non-strangulated hernia. Up to the Seventeenth Century taxis alone had been used for strangulation, and to Pierre Franco, a stone-cutter, must be given the honor of introducing herniotomy in 1652. His minute description of the operation forms one of the bright spots in the surgery of that period. Franco's method was taken up and most strongly endorsed by Ambroise Paré, who first advocated operation for all cases of strangulated hernia. His teaching, however, fell on barren ground, and it was not until two centuries later that herniotomy became generally adopted.

Up to the beginning of the Nineteenth Century it was practically unknown in America. In the life of J. C. Warren,<sup>1</sup> we find it stated that when he began to operate in Boston (about 1804) the operation for strangulated hernia was unknown. He had just returned from England, and attempted to put into practice what he had learned from his illustrious teacher, Sir Astley Cooper, but when he proposed to operate on a patient with strangulated hernia he was met with the greatest opposition, both from the other physicians and from the friends of the patient. He finally gained consent to operate, but the long delay caused the death of the first two or three patients. Convinced that he was right his genius and courage enabled him to go on, and the brilliant results of his later cases did much toward establishing the operation for strangulated hernia in America upon the solid foundation that it has ever since enjoyed. It does not appear, however, that any serious attempts were made to effect a radical cure until after the introduction of Lister's methods of antiseptics.

Henry O. Marcy of Boston, who had enjoyed the privilege of personal instruction under Lister in 1870, appears to have been the first to operate upon strangulated hernia under antiseptic methods, and to close the inguinal canal by means of absorbable buried sutures of catgut. On February 19, 1871, he operated upon a woman aged fifty years for strangulated inguinal hernia, and closed the canal by "two stitches of medium-sized catgut directly through the pillars of the ring." On March 10, 1871, he operated upon a second patient with strangulated hernia, also a woman, and closed the canal "by three large-sized catgut sutures passed deeply through the pillars of the ring, and the wound was carefully dressed antiseptically with Lister's carbolic plaster."<sup>2</sup> The sac was not opened in either of these cases.

Dr. Marcy's first attempt to cure non-strangulated hernia by operation was on February 4, 1878, or several years subsequent to the operations of Steele, Annandale, and Czerny. Richard Steele of London deserves the honor of first attempting to cure non-strangulated inguinal hernia after the introduction of antiseptic methods, though he very modestly states that it seems such a very natural proceeding he does not doubt that others have done it before him. Steele's patient<sup>3</sup> was a boy eight years of age. He cut down upon the canal, exposed the pillars of the ring, pared their edges, and united them with catgut sutures. The hernia recurred in six months, became strangulated, but was reduced by taxis. Steele

<sup>1</sup> Vol. 1, p. 37.

<sup>2</sup> *Boston Med. and Surg. Journal*, November 16, 1871.

<sup>3</sup> *British Medical Journal*, p. 584, November 7, 1874.

then did a second operation, and the patient was well one year later. This case does not seem to have received the attention it deserved, and to Czerny is usually given the credit of being the author of the modern operation. His first published report described five cases.<sup>1</sup> His first patient was operated upon for non-strangulated hernia January 1, 1877, more than three years later than Steele's. Czerny's operation showed a distinct advance over the operations of Marcy and Steele, *viz.*, he dissected out the sac and ligated it before suturing the canal. From the limited experience derived from his early cases Czerny concluded that the thousand-year-old problem of surgery was nearing solution.

Time will permit but the briefest references to the more important of the numerous methods devised since Czerny's first report. As early as 1879 Tilanus of Amsterdam had collected and reported before the International Medical Congress 122 cases in which operation was performed by supposedly antiseptic methods. Seventy-nine of these cases were non-strangulated and forty-three were strangulated. Too few of the patients had been traced sufficiently long to justify conclusions as to the permanence of the cure, and the immediate mortality of six per cent. made many physicians hesitate to advise and surgeons to perform the operation. The subject, however, was so fascinating and the goal of such inestimable importance that the minds of the leading surgeons of the world were engaged in attempting to modify the old methods or to devise new ones with a view of diminishing the dangers and improving the final result. The methods at present in vogue are the result of somewhat rapid evolution in accordance with the law of survival of the fittest. Not one but many workers in the field deserve lasting honor for the part they have played in conferring a priceless boon upon humanity. Among these names should be mentioned Steele, Czerny, Annandale, Marcy, Banks, Championnierre, MacEwen, Barker, Ball, Socin, Bassini, Bull, Weir, Halsted, and Kocher. These surgeons have apparently worked out their ideas independently, and each deserves credit proportionate to the value of the special features in his method which will survive.

While many of the earlier methods have been superseded by the newer and better, we must not forget that the experience derived from the older methods has made it possible to discover their shortcomings and to devise remedies, therefore let us not refuse them a place of honor. There are still a number of methods in vogue, each of which is represented by its advocate as the ideal operation, and it is clearly our duty to study these care-

fully and attempt to discover, if possible, the best. I wish the time permitted a full description of these methods because their technic is not always understood by surgeons who perform them.

Were I called upon to give what I believe to be the most frequent errors of technic and those most responsible for failure to obtain good results, I would say (1) an incision of insufficient length, both in skin and aponeurosis (it should be at least three inches long), and placed too low down. (2) Failure to dissect back the aponeurosis of the external oblique well over to the edge of the rectus muscle. (3) Careless or unskilful dissection of the sac from the cord and the surrounding tissues, thus prolonging the operation and bruising the tissues, and thereby lessening the chance of primary union. (4) Too great tension upon the buried sutures, or the use of non-absorbable sutures.

The question of sutures I will discuss later.

I do not need to tell you that the essential feature wherein Halsted's method differs from Bassini's lies in the treatment of the cord and the closure of the canal. In Bassini's method the canal is closed by suturing the internal oblique and transversalis to the shelving portion of Poupart's ligament (which must always be very clearly exposed) the aponeurosis being carefully retracted on either side during this suturing. The rent in the aponeurosis is then closed from above downward as before by means of a continuous suture, until at the lower angle just enough space is left to permit the cord to pass without undue compression.

In Halsted's method, on the other hand, the cord is transplanted more externally, so that it lies just beneath the skin and superficial fascia. The aponeurosis with the underlying muscles and transversalis fascia, on the one side, being united to the transversalis fascia, Pourpart's ligament and the aponeurosis on the other by means of a single row of five or six mattress sutures. One sees at once that if the cord were left in its normal position there would be great danger of relapse at the point where it emerges. To lessen this danger it was ingeniously proposed to remove "all but one or two of the veins of the cord." Whether or not such a procedure might not cause atrophy of the testis was a matter that experience alone could determine. The subsequent histories of Halsted's own cases as well as those of other observers have proven that this result not infrequently occurs.

From a recent and as yet unpublished report of the results at the Johns Hopkins Hospital Dr. Bloodgood has kindly given me the following very interesting and valuable statistics: Of 109 patients operated upon by Halsted's typical method with

<sup>1</sup> *Wien. Med. Woch.*, No. 23, 1877, p. 527.



excision of the veins there was no relapse, while in 86 cases operated upon by the same method with the single exception that the veins were not excised there were 8 relapses or 9 per cent., 56 of these patients were observed from one to nine years. Bloodgood concludes that Halsted's operation with excision of the veins will give perfect results if primary union be secured, though he admits that excision of the veins is liable to be followed by atrophy of the testis and is, therefore, not always to be recommended. He would not excise the veins in children or in patients in whom the cord had been subjected to traumatism during the dissection of the sac. The number of cases in which atrophy of the testis followed excision of the veins is not noted, but it is stated that it was only observed in those cases complicated by epididymitis. Bloodgood therefore reasons that as the probabilities of epididymitis would be much less after excision of the veins, if the vas and its immediate vessels are not displaced, it would be as well to leave the remainder of the cord undisturbed and he goes on to say that "the cord reduced to such a diminutive size will be as little likely to be the cause of a recurrence in the lower angle of the wound as in the upper angle when it is transplanted."

This is practically an admission that one of the leading features of the method, *viz.*, the excision of the veins is not always free from risk, and that another and perhaps the most important, the transplanting of the cord, if they are excised, is unnecessary.

There is another point in which Halsted's method differs from Bassini's, which though seldom mentioned is, I believe, one of great importance, and that is the free division of the internal oblique and transversalis muscles and the transversalis fascia, or in other words the entire floor of the canal as well as the roof. The free division of the internal oblique has, I think, nothing to recommend it, and since gentle stretching of the fibers and pushing them upwards will always permit of the sac being excised well beyond the neck, it would seem unnecessary. We are willing to grant that the union of divided muscular tissue should be firmer than the union of fascia, but undivided muscle should be firmer still. In the event of failure to secure primary union the dangers of relapse are greatly increased, if these deep structures have been divided and the relapse, if it does occur, will almost surely be more serious in character and more difficult to treat.

After all that may be said on either side in the way of theoretical considerations the question of preference must be finally settled by practical results. If the results of several different methods

are the same, that method which is the simpler in technic should have the preference. While Halsted's method in his own hands and in the hands of his skilful colleagues at the Johns Hopkins Hospital has yielded most brilliant results, they are not equal to Bassini's personal results. In the results of other surgeons we find a much greater difference in favor of Bassini's method. The technic is far simpler, and we believe the rapidly increasing favor with which it is regarded both in Europe and America shows that it is destined in the near future to supplant all other methods.

It is hard for us to realize that the radical cure of hernia has made such tremendous advances in a single decade. In 1890, Bull, who had faithfully tried the best of the methods then in vogue, and on a larger scale than any surgeon in America (in 134 cases) was obliged to confess that his "observations go to strengthen the conviction that all methods of radical cure will be found unsatisfactory." He did not, however, discourage further efforts to improve upon these methods of operation, but merely wished to depict the situation as it actually existed. He was one of the first to subject operations for radical cure to critical tests and to point out that the term "cure" could not rightly be applied to patients who had merely recovered from operations and had not been observed for a considerable period afterward. To show how rapidly advances have come in this field of surgery, the ink was scarcely dry upon the valuable but gloomy paper of Bull when appeared Bassini's brilliant report of 251 patients, operated upon with but a single death, and all but four of them traced from a few months to four and a half years with only seven relapses. Whether or not these same good results were possible in the hands of other surgeons remained for the succeeding years to tell. Nearly a decade has now passed and few surgeons and still fewer physicians realize the tremendous revolution that has occurred in the operative treatment of hernia. Instead of an operation with a mortality of 6 per cent., alone sufficient to make the conservative surgeon hesitate to recommend it, except in cases of urgent need, and with nearly a half of the cases relapsing within a comparatively short time, what is the situation to-day? We find the mortality of leading operations reduced to less than 1 per cent., and that the final results in large series of cases carefully traced show almost entire freedom from relapse. Instead of 30 to 50 per cent. followed by suppuration we find 5 to 10 per cent. If you will pardon a reference to personal work which is given merely to show what any one may accomplish provided he



gives the proper attention to the technic of the operation I will give a brief abstract of my most recent statistics. Since August, 1891, I have operated upon 639 hernias with one death. These are divided as follows: 585 inguinal, 40 femoral, 14 umbilical and ventral. Of this number all except 60 have been traced. 549 patients with inguinal hernia were operated upon by Bassini's method (with 5 relapses) kangaroo tendon being employed for the buried sutures. Of this number, 493 patients have been traced as follows: 4 were sound after 7 years; 4 after 6 to 7 years; 9 after 5 to 6 years; 19 after 4 to 5 years; 69 after 3 to 4 years; 91 after 2 to 3 years; 132 after 1 to 2 years; 101 after 6 months to 1 year, and the remainder after less than 6 months. In regard to wound healing 96 per cent. of the patients operated upon by Bassini's method healed by primary union. The single death was due to double pneumonia without wound complications.

The only points in which I have departed from the original technic laid down by Bassini have been in the substitution of chromicized kangaroo tendon for silk in the buried sutures. I have recently been told by a former assistant of Bassini that Bassini himself has used chromicized catgut instead of silk since 1892. Second, I have introduced a suture just above the cord, passing it through the same structures as those below the cord, with a desire to prevent any further separation of the tissues above the new internal ring and keeping the cord restricted to narrower limits. That these slight changes, too trivial to be called modifications, have been of advantage the results in my series of operations would seem to prove.

Among the many questions of importance in connection with the subject of radical cure of hernia that are still unsettled is that of the best suture material. Silk, silver wire, catgut, kangaroo tendon, silkworm gut, each one has its ardent supporters. Were the question of less importance I should not attempt to discuss it at this time. Like the choice of operative methods, this question also must finally be settled by careful observations based upon large experience and theoretical considerations must again be placed in the background. Silk was probably used by the ancients. Catgut, introduced by Lister, was probably also first used by Lister to close a hernia wound. Czerny used catgut in his earlier cases, but later owing to the difficulty in rendering it completely sterile, substituted silk. Banks whose name must always be mentioned foremost among the pioneers in operations for the cure of hernia, states<sup>1</sup> that the only point of novelty he could claim in the operation which he successfully performed was in

the substitution of silver wire for catgut. He closed the external ring with two or three buried sutures of stout silver wire. Macewen modified the simple catgut suture by chromicizing the gut sufficiently to maintain it in the tissue three or four weeks before absorption took place.

This was a most important modification and the suture of chromicized catgut is to-day, I believe, with the possible exception of kangaroo tendon, the best suture for hernia operation. Shortly after 1890 silkworm gut was introduced as the ideal buried suture, and for a long time it was largely used in operation for hernia, especially in the United States. The advantages of kangaroo tendon, over catgut seem to have been first recognized by Dr. T. M. Girdlestone, a lecturer on surgery at the University of Melbourne. As early as 1877 he brought it to the notice of the Medical Society of Victoria, and in November, 1881, through Sir Thomas Smith of London, he addressed a communication to the Medico-Chirurgical Society of London. In this paper<sup>1</sup> he stated that the tendon suture resists the softening influence of the tissues much longer than catgut. He prepared it according to Lister's method of preparing catgut in carbolic oil, but also stated that if desired it could be furthered hardened by putting it in chromic acid one-half per-cent. solution for seven hours. It has been largely due to the writings of Marcy that it has come to be used so largely in operations for hernia. I have personally employed it in upward of 600 operations for hernia and I regard it as practically an ideal suture. The only difficulty has been in securing tendons of the proper size. If too large they remain in the tissues too long before absorption, and thus are open to the same objections that hold true of non-absorbable sutures. Split tendons should never be used as they are lacking in strength, and are of uneven caliber. Girdlestone himself in 1881 pointed out this fact. Some judgment is needed in selecting the proper size. I prefer for the deeper sutures a tendon equal in size to a No. 2 or No. 3 catgut, while a tendon the size of a No. 1 catgut, or even smaller, will suffice for the closure of the aponeurosis. The cost of the tendons and the difficulty of obtaining tendons of suitable size and strength are objections of some weight. I am not sure that a carefully prepared and properly chromicized cutgut will not prove nearly if not quite as good a suture for hernia as kangaroo tendon, and this is fortunate inasmuch as the supply of tendons is likely to prove insufficient to meet a largely increased demand.

The real and important objection to silk, silver wire, and the whole list of non-absorbable sutures,

<sup>1</sup> *Brit. Med. Jour.*, November 18, 1882.

<sup>1</sup> *Trans. of Medico-Chirurg. Soc.*, 1882.

remains to be noted, and is their liability to cause sinuses at long periods after operation. This objection is not theoretical but based upon personal observation of twenty-seven patients at the Hospital for Ruptured and Crippled, as well as upon numerous reports of other observers. In every one of these cases a sinus developed at periods varying from a few months to three years and eight months after operation. This condition of sinus formation is a serious one, inasmuch as the healing of the sinuses often requires many months and seldom become permanent until the last of the offending sutures has been removed. Nor is this the end, for the prolonged suppuration has in most cases so weakened the canal that relapse usually follows. Thus what might have been a successful operation for the radical cure of hernia has become a complete failure owing solely to the use of a non-absorbable suture. The reasons formerly advanced by surgeons for using non-absorbable sutures were that catgut could not be satisfactorily sterilized, but with our improved methods of sterilization such reasons no longer obtain. A comparison of the statistics as regards wound healing of the surgeons who use catgut and those who use non-absorbable sutures will disprove the validity of such claims.

Primary wound healing was obtained in but 80 per cent. of Halsted's series of cases in which silk was used for the buried sutures, and his later statistics of 261 cases in which silk, silver wire, and silkworm gut were used, 31 suppurred or 11 per cent. These patients, we must remember, were operated upon at a hospital which enjoyed a reputation above all others for the perfection of its aseptic technic. Yet the statistics of other surgeons, under much less favorable operative conditions, who have used absorbable buried sutures show better results as regards primary wound healing. I mention these facts simply to show that the claim, that non-absorbable sutures are necessary to obtain the best results in primary wound-healing, is entirely unfounded. Therefore, there is no logical reason why the final results of the operation should be jeopardized by their use.

With the vast improvement that has taken place during the past decade in methods and results of operations for radical cure, the indications for operation have markedly increased, though in some respects the present views as to selection of cases for operation differ materially from those held ten years ago. At that time operations were almost entirely confined to adults. This was due to the fact that some regarded the operation as more dangerous in children, and others believed that all ruptures in children could be cured by mechanical means. We

now know that both these suppositions were erroneous. The results of large series of operations indicate that the operation is less dangerous in children than in adults; and furthermore a careful study of the after history of a large number of children with hernia has proved that at least one-third of such children pass on into adult life with the hernia uncured by mechanical means. This does not warrant us in advising operation in all cases of hernia in children. At the Hospital for Ruptured and Crippled in New York we have adopted the following rules in the selection of cases and it will be seen at once that these are fairly conservative: Operation is advised (1) in children over four years of age on whom a truss has been given a fair trial without marked improvement. (2) In cases complicated by fluid in the hernial sac (reducible hydrocele). (3) In all cases of femoral hernia, since this form of hernia offers little or no hope of cure through mechanical treatment.

The practice of operating upon infants under one year of age or even two or three years is, I believe, open to serious criticism. Umbilical hernia in infants and children should with some exceptions never be operated upon, for the reason that it is almost invariably cured by other means. With regard to adults it is no longer considered advisable to operate upon the very large and long irreducible herniæ in patients beyond middle life. The operation is attended with grave risks and a speedy return of the hernia will almost certainly occur. The same is true of the large irreducible umbilical hernia especially common in very stout women. While we cannot hope to cure such patients by operation, we should bear in mind that there has been a time when every one of these patients could have been operated upon with a fair prospect of success. Hence the importance of operating early.

Inasmuch as there is only slight prospect of a cure being effected by a truss after the age of twenty years, we can now advise operation in such cases, especially since it is no longer attended with appreciable risk, and the prospect of a permanent cure is very great. Operation should seldom be advised in patients over sixty years of age.

Inguinal hernia in the female has thus far received but little attention, and yet this variety of hernia yields the best results of all under operative treatment. Championnière was the first to urge operation in these cases, and he has recently reported forty-nine cases. His method was to excise the round ligament along with the sac, but I believe this to be, not without objection, and, moreover, entirely unnecessary. The sac can in every case be dissected free from the ligament with a little care and patience.

Kelly<sup>1</sup> of Baltimore transplants the round ligament exactly as Halsted transplants the cord in inguinal hernia in the male and closes the wound by Halsted's method. During the past eight years I have operated upon 100 females with inguinal hernia, and although the patients have been most carefully traced not a single relapse has been observed. The method employed is precisely similar to Bassini's operation in the male, with the transplantation of the cord omitted. The sac having been carefully dissected from the round ligament well beyond the internal ring, is tied off and excised. The round ligament is then allowed to drop down into the lower angle of the wound, and the wound is closed in two layers with buried sutures, according to Bassini's technic. The operation is much simpler than the one performed by Kelly, and the results thus far obtained are perfect.

Time will permit of but the briefest reference to the radical cure of femoral hernia. It is not generally recognized by the profession that the results of operation for femoral hernia are even more successful than for inguinal. Although a great variety of methods, many of them complex in technic and difficult to perform, have been proposed, the simple methods have been found to give the most satisfactory results. Bassini<sup>2</sup> has reported 54 patients operated upon by his own method, without mortality, and 41 of these were traced from one to nine years without a single relapse. Of my own cases, 40 in number, Bassini's method was employed in sixteen, and the method of high ligation and incision of the sac, with closure of the femoral canal by means of a purse-string suture of kangaroo tendons was used in the remainder. The single relapse observed occurred in a patient operated upon by Bassini's method, and it is worthy of note that this was the only case in which there was a failure to secure primary union.

It would not be right to close this brief and very imperfect sketch without saying a few words upon the final results of operations for hernia, in other words, upon the permanency of the cure. Do operations, even according to the best methods, and skillfully performed, really cure the patient, or is he only temporarily relieved? The answer to the question must as yet be more or less tentative. If by a permanent cure we mean freedom from relapse, as long as the patient lives, then, of course, the time has yet been too short for us to make dogmatic statements. Fortunately, however, we already possess sufficient data to enable us to draw fairly accurate conclusions. The careful study of 361 cases of relapse

following various operations for inguinal and femoral hernia observed at the Hospital for Ruptured and Crippled during the past ten years shows the important fact that the great majority of relapses occur within the first few months after operation. Sixty-four and a half per cent. occurred during the first six months and 80 per cent. during the first year, between one and two years after operation 8.89 per cent. relapsed.

From these facts we are justified in concluding that in cases well beyond one year the chances of recurrence are very slight though in some cases relapse has been noted twenty years after operation. Under the methods practised a decade ago the percentages of relapses even during the first two years ranged between thirty and forty per cent. Under the improved method now in use, especially Bassini's, and even with a much more careful tracing of patients this percentage has been reduced to a minimum.

Such then at the dawn of the Twentieth Century is the present status of the radical cure of hernia. "The thousand-year old problem of surgery" has finally been solved in the last quarter of the Nineteenth Century by the happy combination of brilliant genius, rare skill, and unflagging perseverance on the part of many workers in many lands. We must not forget that this combination would have been of little avail without the brilliant discoveries of Morton and Lister. So, that here again in the radical cure of hernia, we find new cause to do them honor and to add to their laurels.

#### CEREBROSPINAL MENINGITIS.<sup>1</sup>

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MEDICINE.

SINCE 1874 three severe visitations and many sporadic cases of cerebrospinal meningitis have come to my notice. Every variety of the disease and its various complications and sequelæ were observed. Following the very cold winter of 1873 and 1874 the disease appeared in Evansville, Indiana, and vicinity. Children were most frequently its victims, and nearly all of those who were first taken sick died. The aged were rarely affected, but a few cases occurred in persons over sixty years of age, and they all died. The rate of deaths was more than 60 per cent., and nearly one-half of those who survived were left crippled mentally and physically and for them death would have been preferable to the miserable existence to which they were doomed.

<sup>1</sup> "Operative Gynecology," vol. ii, p. 481.

<sup>2</sup> *Archiv für Klin.*, 1894.

<sup>1</sup> Read before the Louisville Clinical Society, June, 1899.



There were no prodromata. The disease came on suddenly with a chill or chilly sensation, and in young children convulsions often announced the attack. Pain usually began in the back of the head low down, but sometimes it was first felt in front, or on top, or on one side. Very rarely was the pain complained of at the onset below the cervical region. Within a few hours, or one or two days, pain, usually lancinating and very severe, extended to the spine, arms, and legs, sometimes girdling the chest and abdomen. Vertigo and nausea were early symptoms, the latter often continuing for six or eight days.

Dimness of vision was sometimes complained of at the beginning of an attack, and this grew worse and partial or complete blindness ensued. Divergent strabismus of one or both eyes appeared in some cases within the first two days of the illness. The face wore a peculiar expression of suffering, sometimes a waxy pallor, and sometimes a purplish red with the eyes suffused. Fever was usually not severe, the temperature rarely reaching  $103^{\circ}\text{F}$ ., and in some cases it was below the normal. The pulse was slow as a rule, but in starts it would beat as high as 170 to the minute, and without any apparent cause the beats would become less frequent until 40 or 50 to the minute was recorded.

At first, in the moderately severe cases, the pulse was full and strong, but after the first day it became weak and irregular. Mental symptoms appeared early and often were more severe than other phenomena present would indicate. After a few hours or a few days the symptoms became more severe and the muscles of the back and neck were set in tonic contractions with the head thrown back beyond the perpendicular. On attempting to depress the chin the pain in the neck and back was increased. Opisthotonos was present in severe cases and was especially prominent in most of the fulminant variety. The head and feet would come within a few inches of touching each other. In the fulminant form of the disease death in from four to seventy-two hours was the invariable result. All the symptoms gave evidence of intense suffering from the beginning. The pulse recorded 200 at times, again falling below the normal, and the temperature rose to  $106^{\circ}$  or  $107^{\circ}\text{F}$ . The respiration was irregular and supracostal. Delirium was often wild, sometimes muttering, which ended in coma and death.

Purple-colored spots of various shapes and sizes appeared on the face, neck, body, and legs, which often disappeared suddenly, at times remaining three or four days. Now and then a case was observed in which the patient had a waxy, pale face, feeble, irregular pulse, 35 or 40 to the minute, and a subnor-

mal temperature without opisthotonos or pain which deepened into coma and death in from four to eight hours. This form of the disease was very rarely seen. The disease in such cases seemed to be entirely confined to the brain. When death occurred within the first few hours autopsies revealed nothing of special significance beyond some patches of engorgement along the course of the blood-vessels, over the hemispheres, on the side, at the base, and about the medulla. The cord presented similar appearances though not so markedly as the brain. There was no serous exudation.

Another class of cases, in which the patients died after a week or two, showed more marked changes in the brain and cord. The blood-vessels were hyperemic, inflamed, with deposits of lymph smeared over them and in various patches over the hemispheres, in the ventricles, at the base, in the canal, and about the cord. Effusions, serous or purulent, were found at the base, in the ventricles, and in the canal of the cord. Here and there the membranes were adherent to the brain, and numerous minute hemorrhages were observed. In another form of the disease, which was recurrent, the patient died after four or six weeks, or months, paralyzed and exhausted; and the autopsies revealed abscess and degeneration in the brain and cord.

The second epidemic of the disease was in 1877, and nothing different from the first was observed. A few cases of smallpox occurred at the same time. In both visitations croupous pneumonia preceded some cases, complicated others, and became a troublesome sequel in a few of those who survived the meningeal trouble. Pneumonia was present before, during or after the disease in one-fourth of all the cases I saw. In a few instances the cause of death was ascribed to it as it was the most serious feature of the illness.

When the clinical picture of the malady was made up neither the mycologist nor the ophthalmologist was a necessary factor in determining the diagnosis. A few cases only were observed in which there was any doubt as to the diagnosis, but after a day or two all doubts were removed. It would tax the powers of the most accurate observer to describe every detail of the objective symptoms even though sympathy with the sufferer had sharpened and rendered acute the workings of his special senses. But no great difficulty should be experienced in making a diagnosis when it is remembered that the disease is prevailing. In sporadic cases mistakes in diagnosis are more likely to occur. A person in good health, suddenly seized with pain in the head, over the hemispheres, on the side, or at the base, with pain in the back of the neck, along the spine, arms and

legs, sometimes girdling the chest and abdomen, with anxious look, a suffused eye, the face flushed or of a waxy palor, usually a slow pulse 40 to 60 to the minute, with or without fever, and with irregular respiration, may be regarded as having cerebrospinal meningitis. Then add to this the vertigo, the disturbed vision, the hyperesthesia, the sudden changes in temperature, the early delirium and the persistent nausea and vomiting and the diagnosis becomes more apparent. Kernig's sign will be present in all such cases. Since my attention was called to it a few years ago I have not found it absent in any case either of the sporadic or epidemic kind. There is no practical difference in the phenomena of sporadic and epidemic cerebrospinal meningitis. The same sort of bacilli have been found as the cause of each. Only in very exceptional cases will lumbar puncture be required to confirm the diagnosis.

The prognosis was always very uncertain. Even a mild case would take a turn for the worse or be so long protracted that death would result from exhaustion. A high temperature was always an unfavorable indication and it usually preceded death. Recurring cases were the most protracted, but the patients usually recovered, and when the first ten days of illness were past without serious complications recovery was more to be expected.

There was no time limit to the disease. Some patients were able to sit up and go about after two weeks, some after three to nine months, and others were not fully well after two or three years. Many of those who survived the acute part of the disease were left crippled mentally and physically for life. When it is remembered that the cerebrospinal centers are the seat of the disease any sort of complications or sequelæ may be expected to arise. Mental weaknesses were observed; some individuals were deaf, some were dumb, others were blind, and some were paralyzed. Suppuration of the ear and joints with swelling of the latter and contractures occurred.

In the treatment of cerebrospinal meningitis two important points were kept in view: one was an early diagnosis, and the other the free use of opium. Opium was the most useful in the forming stage of the disease, but it was more or less useful in all stages. It proved useful in relieving pain and preventing mental complications, perhaps by arresting serous effusions into the cavities and delicate textures of the brain, as in like manner it controls an intestinal diarrhea. Morphine alone was given hypodermically and the vomiting was often relieved by it, as well as the cerebral trouble. One-third or one-fourth of a grain, repeated at intervals of a few hours, was sufficient to afford relief. In fever the application of ice-bags to the head and spine was

useful. Hot foot-baths were useful in equalizing the circulation when the extremities were cold. The bowels were kept open by the use of mild laxatives. The importance of maintaining the strength of the patient was kept in view and food and stimulants were given in moderate quantities from the beginning. When nausea prevented their administration by the mouth various mixtures of eggs, cream, and peptonoids were given by enemata. In the case of patients having a subnormal temperature the full bath, tepid or warm, the patient being allowed to lie in it for half an hour gave much relief. The bath was resorted to two or three times daily. Other remedies which gave temporary relief were phenacetin, phenalgin, kryofin, caffeine and codein, but the old remedy, morphine, was the most useful.

Counter-irritants to the neck or spine proved to be useless. Sometimes the application of dry heat to the head and spine was soothing, hot bags of salt, hops, and water, and hot flannels were used. Laminectomy and spinal puncture for diagnostic and therapeutic purposes were not resorted to. Late in the course of the disease some benefit appeared to result from the use of small doses of bichlorid of mercury, one tenth of a grain, three times daily. Iodid of potash and syrup of the iodid of iron and quinin were employed with apparent benefit to the patient. Complications were treated as the indications arose.

Since 1879 numerous sporadic cases of cerebrospinal meningitis have come to my notice either as primary ailments or as secondary results. In acute cases I have found Kernig's sign of much value in making the diagnosis. Cerebrospinal meningitis, as it has recently prevailed in Louisville and throughout the State of Kentucky, has presented no new features. In some localities it has not been quite so fatal as in others. About 30 per cent. of the patients I have seen have died. In the southern part of Kentucky reports would indicate a death-rate of 80 or 85 per cent., with the usual percentage of mental and physical cripples remaining. The usual death-rate recorded is from 20 to 80 per cent.

Let us turn to a brief history of cerebrospinal meningitis, then view it in a clearer light of modern research, and some truths may appear to point the way to a better understanding of this dangerous malady. French writers claim that it was recognized early in the Christian era, but Hirsh by his careful investigations has shown that the claim is not well authenticated. The first accurate report of the disease was given by Viessaux of Geneva, in 1805, when it prevailed in that city and in various parts of Switzerland. At intervals of a few years it appeared in various parts of Europe but England and

Scotland were the least visited. It spread through Germany, France, Spain, Italy, Denmark, Sweden, Norway, Holland, and Great Britain, especially Ireland, and was known in that country as the "black fever." The disease also appeared in Russia, in Turkey, in Greece, and in Asia Minor. It was first observed in the United States in 1806. It appeared at Medfield, Massachusetts, and soon spread westward to various States, North and South. It appeared at intervals in various cities, towns, and villages and in rural districts, sometimes not in the direct line of human commerce. No very serious epidemic has been recorded in the United States such as occurred in Sweden in 1854, when upward of 4000 deaths resulted from a single epidemic. The disease is said to be indigenous in Germany and it may be said that this is also true of parts of America. It has not been absent from Boston and Philadelphia for twenty-five years, about 6000 deaths have been ascribed to it in and about those cities within that period of time.

Cerebrospinal meningitis made its appearance in Kentucky during the last days of November, 1898, and soon after was observed in various parts of the State. The first case I saw in Louisville was about the middle of December, 1898. The disease had been reported in Boston, New York, and Philadelphia, and in numerous smaller cities and towns about the latter part of August of that year. It occurred in Baltimore and Richmond in October. It seemed to spread westward to various points, north, west, and south. The question of direct communication between infected and non-infected localities has not been clearly traced and the mode of communication from the sick to the well is still a mystery. The weight of evidence shows the disease to be infectious and even contagious, but the number of such cases is not great. The writer has seen five cases in one house, occurring in succession, three in another, and two in another. He is also aware of the case of a lady who came from a village in an adjoining State and remained with a sister for ten days who had meningitis, who, two or three days after returning to her home, was taken sick with the disease. A child contracted it from the mother and a few cases occurred here and there in the village. No case had been known in that locality before. Two nurses who cared for the sick were stricken.

These instances, which point to a direct infection, are few when viewed in the light of several hundred cases where only one occurred in each house. When it is remembered that there is no disease that affects everybody, and that the condition of the host is an important factor before the microbe enters, the few facts gain much force.

The recent discovery of the microbic origin of the disease must confirm the foregoing ideas of infection. Many forms of bacilli have been found in the meningeal exudates, but by far the most constant has been the micrococcus lanceolatus encapsulatus, either alone or with other bacilli. Lately the diplococcus intercellularis meningitidis has been found by numerous mycologists, Weichselbaum being the first to isolate it, in 1877. This bacillus is believed by many to be the cause of epidemic meningitis. All agree that the Freidlander bacillus will cause the disease in a very malignant form. The latter organism was first isolated by Eberth, in 1880. He found it in the cerebral exudates of a case of meningitis following pneumonia. Bozollo and Leyden found the pneumobacillus in 1883. Prudden found the Friedlander bacillus in a case of traumatic meningitis. Netter found the pneumobacillus in sixteen out of thirty cases of meningitis in which pneumonia had not occurred. He also found the micrococcus lanceolatus encapsulatus in the mouths of 80 per cent. of healthy people examined. Pneumonia and meningitis are so frequently associated that Fagge of Erlangen has reported fourteen such cases that came to his knowledge between 1866 and 1872.

In the report of the Board of Health of the State of Massachusetts for 1898 Drs. Councilman, Mallory, and Wright seem to have found in the exudates of cerebrospinal meningitis the diplococcus intercellularis most frequently. In cases in which lumbar puncture was practised within the first ten days of the attack it was nearly always present in the fluid drawn off but later it was not found so frequently.

#### THE TREATMENT OF TUBERCULOSIS.

By LAWRENCE F. FLICK, M.D.,  
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SUFFICIENT progress has been made in the treatment of tuberculosis during the last decade to warrant the removal of the disease from the category of incurable to that of curable diseases. By this is not merely meant that certain patients recovered from tuberculosis, as has been demonstrated on the autopsy-table, but that the power of the physician over the disease has been increased to such an extent as to enable him to cure a fair number of patients and to stay the progress of the disease when he cannot cure. These results have been attained, not by the discovery of specifics, but by the acquisition of a fuller knowledge of the etiology and pathology of the disease, of a better understanding of immunity and nutrition, and of a more exact knowledge of the action of drugs. Unfortunately this progress has not been sufficiently taken account of by the general



practitioner, who still but too often contents himself with smoothing the downward path of his consumptive patient to an inevitable doom with the prescription of cough mixtures and the recommendation of a change of climate.

With tuberculosis, as with everything else in the healing art, success depends more upon attention to details than upon the use of wonderful remedies. The man who has command of the largest number of hygienic, dietetic, and therapeutic resources, and who knows how to use them to the best advantage scores the largest number of successes. Measures which give excellent results in one case may not do so in another and may not do so in the same case in all stages. Hence adaptation of measures to an individual case and ready command of new measures when remedies which have done well no longer answer is of great importance. Sometimes a slight change in the diet or even in the dosage of a remedy will make a change for the better.

Immunity is the fundamental principle underlying the treatment of tuberculosis. Whatever makes for immunity makes for recovery. The chief means at our command for attaining immunity are: first, nutrition; second, drugs; and third, antitoxins. Nutrition must be assigned first place by all odds. For the attainment of nutrition we have forced feeding, artificial digestion, rest, exercise, and climate. By forced feeding is meant the taking in of a very large quantity of easily digested and readily assimilated food. In practising forced feeding care should be exercised to adapt the food to the individual and to inquire with the minutest detail into the patient's habits of eating and his capacity for digesting food. What agrees with one often disagrees with another. The best criterion as to whether the right food and the proper amount is taken is to be found in the patient's weight. If he is gaining in weight it may be assumed that he is getting the proper food and in proper quantities. When the stomach is incompetent to do its work, or when the secretions of the salivary glands or of the pancreas are deficient artificial digestion should be resorted to. Albuminous food may be predigested or pepsin and hydrochloric acid may be administered after meals to aid the stomach in digesting such food.

The digestion of starchy food may be aided by the administration of diastase in some form. All the organs concerned in digestion and nutrition should be carefully watched and kept up to their full standard of activity. In this connection the liver, intestines, and kidneys should not be lost sight of. The bowels should be kept open and the kidneys protected against overwork. And it must not be forgotten that oxidation is an important stage of the

nutritive process. A liberal air-supply is as essential to healthy nutrition as ample good food, competent digestion, and assimilation and proper elimination. Life in the open air should, therefore, be pursued as far as practicable. The living and sleeping-rooms, when house-life is followed, should always be well ventilated. It does not make as much difference from whence the air is obtained as that the air be free from the products of combustion given off in respiration. Rebreathed air above all should be avoided. The old prejudice against night air, city air, and sea air may safely be laid aside. Of course country air is better than city air because it is freer from impurities of various kinds, but for the purposes of nutrition, city air, if it is obtained from out of doors, answers very well. Only let the consumptive have lots of it both by day and by night. A good plan is to allow him to lie out of doors in a hammock, well clothed and wrapped. If he cannot lie out of doors the recumbent position in a room with windows open is next to be preferred. A draught of air need not be feared provided the patient is properly protected with wraps. But outdoor life must not be interpreted to mean constant exercise. There is great danger in over-exertion. During activity of the disease as manifested by fever and acceleration of heart-action better results can be obtained from rest than from any other measure. In proportion as the active symptoms disappear rest may be supplanted, first by passive exercise, and then gradually by active and then more active exercise, until finally the patient may be allowed to do a hard day's work. When the circulation has resumed its normal course exercise becomes a useful means for the furtherance of nutrition. It should, however, be used under the direction of a physician.

Climate no longer plays as important a part in the treatment of tuberculosis as it did a few years ago. We know now that it is not so much the climate as the outdoor life that makes our patients do better when they go to the mountains. The idea that certain climates have a specific influence over tuberculosis was born of a misapprehension. Because certain regions which had not yet been infected were free from consumption the profession jumped at the conclusion that there was something in the climate of those regions which militated against the disease. Those regions have all become more or less infected and we now know that there is very little in climate itself that will ward off or cure consumption. During the acute stage of tuberculosis better results can be obtained at home, even if that home be in a densely populated city, than away from home, unless the patient can be placed in a well-equipped sanatorium. The mod-

ern sanatorium undoubtedly offers the best chance of recovery to the consumptive; but outside of a sanatorium, in acute cases, the chances of recovery are better at home than away from home. After acute symptoms have passed excellent results may be obtained by a change of climate, and then a climate should be selected to suit the idiosyncrasies of the patient. Persons with weak hearts do better at a low elevation than at a high one and sometimes do best at sea-level, and preferably at the seashore or on the ocean. Persons of vigorous circulation or of nervous or lymphatic temperament usually do better in an elevated climate. It is, however, not always a good plan to keep a patient in the same climate too long as there is some benefit to be derived from a change irrespective of what there may be in the climate itself.

What can be accomplished by drugs in the treatment of tuberculosis? A great deal if the drugs are judiciously used. We have no specifics for tuberculosis and may never get any, but we have valuable adjuvants and are constantly adding new ones to the list. In my own experience I have found iodine the most valuable remedy at our command. I use it in the form of euophen, which I introduce by inunction. The following is the formula which I employ: Euophen, 3 i; oil of rose, *m. j.*; oil of anise, 3 i, and olive-oil, 3 iiss. Of this I have the patient rub from a teaspoonful to a tablespoonful into the armpits and into the inside of the thighs once or twice a day. Formerly I used iodoform in this way but owing to its offensive odor I have discarded it in favor of euophen, which is even richer in iodine than iodoform. As the patient becomes more tolerant of the iodine I sometimes reinforce the inunctions by giving the euophen by the mouth in addition. I have tested the value of this treatment for a long enough period to convince me that it is real and worthy of confidence. The treatment ought to be kept up for a long time and even after all symptoms of the disease have disappeared.

The next most valuable drug in my experience is creosote. This is of especial value in the more advanced stages of the disease. In all cases of tuberculosis which have advanced to the stage of breaking down I give creosote in addition to euophen inunctions as a routine treatment. In order to get the full benefit of creosote large doses should be given. I begin with 1 drop and increase the dose gradually until the patient takes from 40 to 50 drops three times a day. The best vehicle which I have found for administering the drug is hot water. As I increase the dose of creosote I increase the amount of hot water, and in this way my patients find themselves able to take large

doses of the drug without inconvenience. The maximum dose is usually taken in a pint of water. As a rule I order the creosote taken before meals and am under the impression that it stimulates the appetite. I use pure beechwood creosote in preference to other preparations because it is less expensive.

The third place in the order of importance in the value of drugs for the treatment of tuberculosis I unhesitatingly assign to strychnin. In what way it acts I do not know, but if given in proper doses it helps to increase weight and improves the heart-action. As a rule it ought to be given in large doses, but all patients do not bear large doses well. The dose should be changed from time to time. Other drugs that are useful in properly selected cases are arsenic, digitalis, mercury, both in the form of calomel and corrosive sublimate, belladonna, muriate of ammonia, aromatic spirits of ammonia, nitroglycerin, the mineral acids, and the vegetable tonics. Most of these drugs may be used to advantage for building up nutrition. Nitroglycerin is useful for checking hemorrhage, ammonia for stimulating the secretions of the bronchial glands.

Antitoxins in the treatment of tuberculosis are still on trial and for self-evident reasons cannot be judged for some time to come. Of the men who have used them in various forms and modifications the most conservative speak guardedly of their value. There is undoubtedly some merit in them and they seem to be legitimate remedies in the hands of competent persons. The tuberculins, antituberculins, serums, and nucleins may all be grouped under the head of antitoxins as they all probably act in the same way. I have as yet had no experience with any of these preparations, but for some time I have used a modification of antitoxin treatment, if I may so call it, which has given good results. I place an ordinary fly-blister over the affected lung, front or back, and allow it to remain in place about an hour. I then have the plaster removed and the skin washed with warm water. In the course of a few hours a large vesicle will rise and as the epidermis has not been broken the serum is retained and in twenty-four hours is reabsorbed. During the process of resorption of the serum chills, malaise, and some fever are liable to occur and the whole picture of the clinical symptoms is similar to that which has been described as occurring after the injection of antituberculin. For the occurrence of these phenomena I have only the word of patients, as I have not had an opportunity of making careful bedside observations. I believe I can safely say, however, that benefit follows the application of a blister in this way, and that the benefit is greater than that which ordinarily follows the application of a blister.

EMPHYEMA FROM A SURGICAL STANDPOINT.<sup>1</sup>

BY JOHN C. MUNRO, M.D.,

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I HAVE very little that is new to add to a subject upon which so much has been written, but there are a few points that I think will bear repeated emphasis until it is more thoroughly recognized that pus in the pleural cavity needs as early and complete evacuation as it does when in the abdominal cavity. My conclusions are drawn entirely from my own experience and they have been reached after much thought and observation.

*Anesthesia.*—In the hands of a skilled etherizer there are very few cases in adults, to which class my experience has been largely limited, in which ether cannot be given; but unless properly given and with intelligent supervision of each inspiration it may be dangerous. It can be given to children easily controlled, while in very young children the stage of unconsciousness is so rapidly attained that its use is safe in a large majority of cases. The rule of giving fresh ether or fresh air, avoiding asphyxiation, must always be observed. I have seen collapse from ether in an infant in one case, but in this instance, and probably in similar cases, the operation had been so long delayed that anything beyond aspiration would have produced collapse. I have used chloroform in double empyema in children, and when struggling and coughing had to be reduced to the minimum. In adults, however, with whom one can reason, I believe that ether is safe and preferable in a large proportion of cases. I have used it without evoking any symptoms to cause anxiety in patients with deep cyanosis, delirium, muscular twitching, intermittent pulse, and excessively rapid respiration; in a woman, seven-months pregnant, with deep cyanosis and a weak, rapid pulse; in a man with the left chest so full of pus that the spleen was pushed down to the ilium and so distressed in his breathing that he could not lie down. On the other hand, in one case, a man profoundly poisoned with streptococcic absorption, ether was taken badly, the stage of excitement was marked, and undoubtedly in this instance the operation should have been performed under local anesthesia, but such a case is rare. The objection to the use of cocaine as a routine means of producing anesthesia is the mental shock and fright added to the peculiar condition of mental distress that is so characteristic of this disease; the struggling which is frequently more marked than in patients properly etherized, and the not infrequent imperfect

anesthesia produced. The struggling that attends primary anesthesia with ether is easily controlled, is of short duration, and is not due to suffering.

*Expansion of the Lung.*—To insure rapid expansion of the lung too much cannot be said to induce physicians to submit their patients to early operation. Were this principle followed more strictly than it is such operations as those devised by Schede and Estlander would rarely be required. One cannot tell beforehand in what type of case the lung will expand early, and although occasionally a patient is seen in whom, after conservative treatment, rapid expansion follows a late operation, these cases are exceptional and are dangerous precedents. To have the compressed lung follow one's finger to complete expansion as the pus flows from the chest is most satisfactory both to patient and surgeon, while to submit a patient after months or years of treatment for a persistent sinus to a severe operation, a long convalescence, and a deformed and inadequate chest is disheartening to say the least. I have doubts of one's ability to foretell what lung will expand rapidly in all cases. Of two adults with streptococcic empyema following pneumonia, operated upon within a few days after the onset of the empyema, when the conditions were as nearly alike as possible, the lung in the one case followed the evacuation of the pus and expanded to completion at once, while in the other the lung refused to expand to any extent by the end of a week, when death took place from a pneumonia of the opposite lung. In another streptococcic case treated expectantly for two months the lung steadily expanded, in a few weeks after resection of a rib, but this is an exceptional case and an unsafe example to follow. I have had delayed expansion or incomplete permanent expansion in both pneumococcic and streptococcic empyema, but when the operation has been done soon after the formation of pus immediate expansion has taken place in both types, though as a rule complete expansion is rather apt to be slower in the pneumococcic cases, that is, full resonance is not noted before several weeks. The cases of incomplete expansion in which operation has been delayed are usually those of mixed infection, and the severer secondary operations have been resorted to after long and tedious drainage.

It is a well-established rule that pus should be evacuated as soon as it is discovered, and yet I know of no place where this principle is more applicable than in cases with pus in the pleura, a principle that in my experience is constantly violated by practitioners of large experience.

It should be borne in mind also that incomplete expansion may come from imperfect drainage, from relapse consequent upon a return to a life of hard-

<sup>1</sup> Read at the sixteenth annual meeting of the American Climatological Association, held at New York, May 9, 10, and 11, 1899.



ship or dissipation too soon after healing of the wound, and from an accident that occasionally happens, the loss, unknown to patient and surgeon, of a drainage-tube or a sponge in the pleural cavity.

The sinuses that persist in tuberculous patients form a class by themselves and are not considered here.

*Cause of Death.*—The deaths in my cases have come from dislodgment of an embolus from hearts displaced by a left pleural cavity filled with pus; from a relapse or an extension of a pneumonia, and in the streptococcic cases from a rapid general infection. In the first class of cases, especially of long standing, one or more preliminary aspirations to reduce the distention gradually are safer, but in recent cases it seems sufficient to evacuate slowly at the operation and then to enforce absolute rest for a few days. The streptococcic cases occasionally are so rapidly fatal that, no matter how early the cavity is emptied, nothing is of avail; but in those not so acutely poisoned, when there is a steady and persistent absorption, the chances of recovery are far less after a late than after an early operation, and this possibility is very apt to be overlooked by those who have had but little experience in pyemia and septicemia.

*Technic.*—The operation for empyema is well described in all text-books, but I wish to suggest some modifications that have proved useful to myself and which may be of some help to the practitioner who is called upon but rarely to undertake the operation.

I make it a rule to explore with a trocar for diagnosis as soon as the patient is anesthetized. In old left-sided cases, with marked displacement of the heart, the pus may be withdrawn by preliminary aspiration to avoid the risk of embolism. I rarely open between the ribs; drainage is not so satisfactory and, unless there are urgent indications to the contrary, resection of a rib is practically as safe, and in other ways is better surgically in the large majority of cases.

The incision, especially in cases requiring rapid operation under primary anesthesia, is best made at a right angle to the rib. There is no danger of missing the rib selected; it can be reached at one stroke, and plenty of room is allowed for resection. Practically I now use this incision in all cases. It is not necessary to resect the rib at the lowest level. Personally I prefer the seventh or eighth; the cavity usually found is just as well drained at this level and there is no danger of wounding the diaphragm.

In cleaning the periosteum from the rib I prefer a periosteum elevator without a cutting edge—the

handle of a knife or a pair of scissors curved on the flat is equally good—because the danger and annoyance of wounding the artery is reduced to a minimum.

The cavity drains equally as well if made in the anterior or mid-axillary line as when made far back where the rib is more difficult of access. The drainage-tube should be short; it should not project beyond the inner surface of the chest. The cavity drains better and the irritation of the lung pressing on the end of a long tube is obviated.

When a suitable operating-table is at hand the operation may be done with the patient half sitting up, the arm of the affected side being held over the head. In this position free respiration is allowed to the healthy side and free access is given to all but the furthestmost portion of the chest posteriorly. Moreover, most patients breathe more easily in this position.

After operation patients improve more rapidly if they are allowed to sit up as soon as they can do so safely. Systematic lung and chest exercises, climbing hills, running, etc., are all valuable aids in expanding the lungs. The pneumatic cabinet, and in obstinate cases, removal to a high altitude should be of value also, though I have had no experience to verify the latter suggestions.

## CLINICAL MEMORANDUM.

### A CASE OF SARCOMA OF THE TONSIL. THREEREMOVALS, RECURRENCE AFTER EACH. DEATH FROM METASTASES IN MESENTERY AND BOWEL.<sup>1</sup>

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SARCOMA of the tonsil has been looked upon as a rare condition, this view being largely due to the statements found in the text-books of McKenzie and Bosworth. The former under the general head of cancer of the tonsil remarks that the disease is rare; yet later, in the same chapter, states that lymphomata, or lymphosarcoma are found as a part of a general condition. Bosworth could find in 1892 only 45 cases that could be considered as having their origin in the tissues of the tonsil.

In 1895 Lamphear found 71 cases recorded. Since then it has not been uncommon to see isolated cases reported. Very few surgeons have seen more than 1 or 2 cases in a long and extensive experience.

I wish to report a case that in many respects is unique: W. H. H., aged thirty-seven years, consulted me May 7, 1898, with the following history: For two months he had noticed a small mass forming in his throat on the left side. No pain or other discomfort until the past few

<sup>1</sup>Presented to the American Laryngological, Rhinological, and Otological Society at its annual meeting, May, 1899, Cincinnati, Ohio.

days, when it began to be sore and present a sense of something in the throat, and seemed to interfere with talking by the presence of a fulness. He had been in poor health for several months, had lost flesh, and said he had dyspepsia. His family history was negative. On examination, I found on the left side, hanging by a narrow pedicle from a crypt of the tonsil at its lower part, close to the anterior pillar, a mass as large as an olive of a dark purplish color, and roughened on its surface like a raspberry. It could be lifted by forceps, and the pedicle was well defined. There was no cervical glandular enlargement. The appearance was suggestive of papilloma and I advised removal by means of the snare because of the apparent great vascularity.

The tonsils on both sides had undergone the normal atrophic process, and did not protrude beyond the plane of the anterior pillar. He had not been a sufferer from chronic throat trouble or recurring tonsillar inflammation.

The parts were cocaineized and a cold wire snare loop was easily passed around and pushed well down on the pedicle. The growth seemed soft and yielded easily to the snare constriction. In ten minutes the mass came away. Only a little blood-stained saliva was expectorated. The mass was examined closely after removal and macroscopically looked like an angioma, numerous small blood-vessels being seen just beneath the epithelium. No discomfort followed and he was not seen again for three days. At that visit a small granulating mass seemed to be pouting from the tonsil crypt but nothing was done, as it was believed that it would rapidly cicatrize.

June 20th I next saw the patient; he said the mass in his throat was growing again. On examination I found that it was returning, and was then as large as a raspberry, and resembled it very much in size, color, and conformation, attached to the tonsil by a constricted base somewhat broader than the original pedicle. This second growth was removed with Gradle's cautery snare close to the tonsil, and the depression from which it sprung was gone over thoroughly with a cautery-point, and the parts thoroughly destroyed. I saw him in two days, the throat being quite sore from the burning. Being now suspicious of the condition, I asked my friend Dr. A. O. Pfingst to examine the mass removed. His report is as follows:

"I take the specimen you sent me for a lymphosarcoma. It was soft to the touch, had an uneven surface covered by a smooth membrane which in parts was thick and formed white nodules. The membrane otherwise was thin and transparent, showing the brown tissues beneath it. It was easily torn or punctured by a slight touch of a blunt instrument. On the interior the mass had a brown color. It was soft and brittle and could readily be made to bleed. Particles of the tissue, teased in glycerine, showed large, round cells with granular protoplasm and many red blood-cells, also some fibers of connective tissue.

"The specimen was hardened in formol, sections being made through its long diameter and these stained with hematoxylin and eosin. The growth was covered externally by stratified epithelium, a light line of demarcation being visible between it and the pseudoplasm. The

tumor mass was made up almost entirely of large, round cells with nuclei loosely arranged and separated by a granular intercellular substance.

"Bands of connective tissue could be seen distributed throughout the tissue, many of them carrying wide blood-vessels. Extravasated blood could be seen abundantly throughout the tissue in areas of different sizes."

I next saw the patient July 24, 1898. He informed me that since the last operation he had been suffering from his stomach and bowels, and had spent two weeks at a resort the waters of which had been advised for this bowel trouble. During the last two weeks the throat tumor had again begun to show itself, and that a small lump that felt tender on pressure could be felt on the outside. I now informed him of the possibility of the serious nature of the growth, and advised its removal more thoroughly. On examination I found the recurrence was not extensive and the surrounding parts were not inflamed. For the third time the growth was removed, the cautery snare being used and the entire tonsil deep between the pillars cauterized. Four days later I saw him, the cauterized area was clearing of slough and looked well, but the glands along the margin of the sternomastoid were tender and several of them enlarged.

For the further history of the case I am indebted to Dr. James B. Bullitt. September 17, 1898, the patient was seen by Drs. Cartledge and Bullitt with the history that two weeks before he had noticed a lump in the left side below the ribs, about the size of a turkey egg and movable. When seen he was suffering from evidences of acute bowel obstruction; an operation was done. The abdomen was opened in the middle line. The bowel was found obstructed by a nodular mass in the wall of the gut; intestines were much distended above. The mesenteric glands were enlarged, many being as large as a partridge egg. These enlargements in the mesentery were numerous along the vertebral column on the left side; two were removed. The patient died September 26, 1898, nine days after the operation. Microscopical examination of the mesenteric gland removed by Dr. Bullitt, showed it to be a round-celled sarcoma. The condition found at the operation was suspected, but as the symptoms of bowel obstruction were acute, the necessity of relieving this by abdominal section was urgent. The bowel was opened above the seat of obstruction, and water taken by the mouth in a short time passed through the incision, showing the opening in the small intestine to be high up.

Out of approximately 80 cases of which I can find records in the literature at my command, there are only 3 that in their local appearance and history seem to resemble the one just reported. Czerny reports a case of male, thirty-four, tumor pedunculated. Removal, recurrence, metastasis to wall of intestines, peritoneum, and mesenteric glands. Schroeller reports a case in which it assumed a well-defined pedunculated form. Charnley, 1895, reports a case of lymphosarcoma, the size of a small orange, removed three times, with rapid recurrence; original tumor had a very narrow, restricted pedicle. Knight states that the usual form of pedunculated tumor

growing from the tonsil is papillomatous, or fibromatous, usually the former. Schmidt among 32,997 cases of diseases of the upper respiratory passages found only 2 cases of sarcoma in this region.

Most of the cases that I find reported commence with enlargement of the tonsillar gland structure, and with evidences of local inflammatory action and discomfort. Lymphosarcoma, the most malignant variety, is the one most apt to be found originating in the glandular structure of the tonsil.

From the frequent and early appearance of gland enlargements in other parts of the body, especially the cervical region, it has been suggested that possibly the tonsillar condition was only a part of a general sarcomatous process, so-called Hodgkin's disease. When first noted in the tonsil metastatic deposits have been observed in the lungs, liver, intestinal walls, peritoneum, and mesenteric glands. The probability of it being a part of a general sarcomatous condition is borne out by the treatment; extirpation of lymphosarcoma either by external incision or by the mouth has not succeeded in prolonging life, recurrence and death taking place in from four to six months. The only cases in which recurrence has not been noticed were cases of spindle-celled growths.

## MEDICAL PROGRESS.

**Two Cases of Typhoid without Intestinal Lesions.**—LARTIGAU (*N. Y. Med. Jour.*, July 23, 1899) reports two cases of typhoid fever, confirmed by autopsy, in which there were no intestinal lesions. The large and small intestines appeared at autopsy absolutely normal, and the retroperitoneal and mesenteric glands were not swollen. Cultures made from the liver, gall-bladder, and kidney contained bacilli which various tests showed to be the bacillus of typhoid fever. Only a few cases of this character have been reported.

**The Bad Effects of Hydrogen Dioxid.**—SPENCER (*Therapeutic Gazette*, July, 1899) mentions a number of cases in which the use of hydrogen dioxid has retarded the healing of a wound. In one of these the daily use of this agent for four days enlarged the sinuses in the breast, and was the means of carrying the infection beneath the axillary scar. The patient had been operated upon for carcinoma. In another instance a patient with two stitch abscesses in the abdominal wall suffered from cellulitis of the whole right side of the abdomen following immediately upon the use of dioxid of hydrogen. The bad effects are attributed by Spencer to the forcible dissemination of infectious material by the bubbling of the dioxid. The mechanical action exerted upon the tissues by this agent, during effervescence, is far greater than is supposed by many to be the case. It possesses the power to travel in relaxed tissues, along nerves, in the tendon-sheaths, and in the planes of the muscles. For this reason it is unsafe to use it in infected wounds in certain locations, with or without pus, in abscess cavities either acute or chronic where the walls are supposed to

be weak, in closed cavities, and in the tissues surrounding the larynx and trachea, especially in young children.

**Sterilization of the Skin.**—SENGER (*Archiv für Klin. Chir.*, vol. 59, p. 425) gives the results of a long series of experiments conducted by him in order to discover the best method of sterilizing the skin. He finally adopted the following technic: (1) Mechanical cleansing of the skin with ordinary soap and water just as hot as it can be borne—about 40° to 45° C. (104° to 113° F.). This scrubbing should last at least five minutes. (2) Bathing or rubbing the hands with alcohol (forty to sixty per cent.). (3) Washing the skin for two minutes with a warm two- to five-per-cent. solution of hydrochloric acid. (4) Washing the skin for one minute with a warm one-half-per-cent. solution of permanganate of potash. (5) Washing the skin with sulphurous acid until it is decolorized. The whole process takes about ten minutes. Senger insists upon having the solutions warm, claiming that their antiseptic action is much increased by the heat. By this method he has been able to obtain sterility in almost every instance in which the skin was tested by scraping. He objects to this method of making the test, however, on the ground that it is not as accurate as when small snips of the skin are embedded in the culture material. When tested in this way the skin was found to be sterile in about seventy-five per cent. of the recent experiments. This is far in advance of the results he was able to obtain by any other method.

**Importance of an Early Diagnosis in Melancholia.**—BURNETT (*Kansas City Med. Record*, July, 1899) insists upon the importance of making a diagnosis in the incipient form of melancholia. He thoroughly believes that in nearly every case which is recognized early the patient may be cured by suitable treatment. Two striking histories in support of this view are given. Since January last the author has been called upon to treat nine cases of melancholia, all presenting apparently equal chances for recovery. Three of them were sent to a public asylum, where they still remain mentally unimproved. The other six were treated in a private institution, and every one has returned home apparently quite well, although the writer recognizes that a repetition of the wear and tear which caused the first mental break-down may bring on a second attack.

**Complete Obstruction of the Bowel.**—FELL (*Indian Medical Record*, June 14, 1899) reports a case of total obstruction of the bowel lasting thirty-four days. The patient had cancer of the sigmoid flexure, and had entered the hospital for operation, but, learning that a cure of his trouble would probably not be brought about, he refused all operative interference and returned home. For some weeks previous he had taken very little nourishment. After the obstruction became absolute he suffered intense pain for a few days, and had severe vomiting of greenish fluid containing material like coffee-grounds. Not even flatus passed his rectum. After the first week the pain was less, and at times he was free from vomiting. The patient washed his mouth with



water, and occasionally drank a little water, also a little ginger beer. In the second week the dark stains which one is accustomed to see on the cadaver began to show on the distended abdomen. These increased until at the end of a fortnight, the whole abdomen and thorax were mottled like the dependent portions of a corpse. An abscess appeared at the angle of the jaw on the right side, about the size of an orange; it suppurated and broke, and continued to discharge until the time of the patient's death. The urine was clear and free from albumin, and of 1023 specific gravity. The patient never complained of hunger. Up to the time of his death his mind was clear, and he gave as little trouble as possible. The pulse reached 110 by the end of the month, and gradually decreased to 80. About the twenty-fourth day of starvation the lividity began to spread to his arms, and by the thirtieth it was universal except for the face. He died on the thirty-fourth day. At autopsy the bowel above the obstruction was found to measure eighteen inches in circumference. It contained some liquid feces and an enormous quantity of flatus. The stomach and small intestine were empty. From his observations in this remarkable case, Fell concludes that people suddenly deprived of food, whether shut up in a mine or shipwrecked, and who die in from five to eight days, succumb from mental exhaustion rather than from actual starvation. In his opinion, if they would face their position with the fortitude which this man exhibited they might survive a month or more.

*Intestinal Disturbances Produced by Otitis Media in Infants.*

—HARTMANN (*Archives of Otology*, April-June, 1899) has some years insisted that otitis media of infants may be accompanied by disturbances of nutrition, as evidenced by dyspepsia and emaciation. Upon evacuation of the contents of the middle ear by paracentesis the disturbances in digestion disappear, and an increase of weight follows. Elevations of temperature occurring in the course of intestinal disturbances may be referred to a complication with otitis. In all intestinal affections of infants, accompanied by elevation of temperature and reduction in weight, an examination of the ears for the possible presence of otitis should not be neglected. In adults chronic otitis often affects the general organism, and it is safe to assume that the same relation exists in the young infant. From a recent study of numerous cases he further concludes that acute febrile otitis causes a diminution in weight, or arrest of increase in weight; that otitis accompanied by grave septic symptoms probably causes diarrhea; that an acute febrile otitis occurring during intestinal diseases may act upon the general constitution, and by reducing the vitality, aggravate the intestinal affection or retard recovery; and that whether there is a direct relation between atrophy and an otitis, must be reserved for further observations.

The diagnosis of otitis media in young infants can usually be made by direct examination. Although the canal is small and obliquely situated, if the scales of wax which it contains are removed, preferably without syringing, the tympanic membrane can usually be seen through a suitable speculum. Frequently the examination

appears to reveal a normal drum membrane. More importance should be attached to the opacity of the membrane, as an exudate may be present without causing it to bulge outward. In doubtful cases an exploratory puncture may be permissible. The treatment of otitis in infants is based upon the same principles as the treatment of otitis in adults. If there is restlessness, pain, fever, and emaciation paracentesis should be performed without delay. After the exudate which runs out of the opening has been wiped away, inflation should be performed and repeated daily. A bit of sterile medicated gauze should be kept in the auditory canal. If the chief symptom is pain, a warm solution composed of one part of carbolic acid to ten parts of glycerin may be poured into the auditory canal and pressed toward the tympanum by repeatedly compressing the tragus with the finger. After a few minutes the solution should be removed with absorbent cotton. Such attempts may be successful in cutting short the inflammation, and so avoiding paracentesis. If there are no urgent symptoms expectant treatment is advisable. If resolution does not take place spontaneously paracentesis should not be delayed. If the secretion is copious and purulent particular care should be taken to maintain a sufficiently large opening in the membrane. The mastoid cells may be involved. If so, their exudate drains through the tympanic cavity, but recovery may still take place without recourse to opening of the mastoid. Inflation of boric acid aid recovery, and as the powder is dissolved by the exudate there is little danger of retention. If the secretion does not diminish in spite of treatment, or if there should be edema or an abscess in the region of the mastoid, operation is absolutely indicated. One frequently finds granulations and detached particles of bone or even large sequestra. The general condition of the little patient must not be neglected. Nasal respiration should be maintained if possible. It is often helpful in nasal catarrh to close the mouth of the screaming infant, thus forcing it to breathe through its nose. If the nasal secretion is very purulent, a one or two-per-cent. saline solution or a weak solution of peroxid of hydrogen may be forced into one nostril while the head of the infant is held downward. Favorable results have also been obtained by the use of a 1 to 1000 nitrate-of-silver spray. The presence of adenoid vegetations in infants is a rare complication.

## THERAPEUTIC NOTES.

*On the Treatment of Rectal Prolapse.*—LUDLOFF (*Archiv für Klin. Chir.*, vol. 59, p. 447) emphasizes the importance of a correct understanding of the structures in the rectal region if one hopes to treat intelligently a rectal prolapse. The rectum is not merely a mucus-lined tube, but a hollow muscular organ which, when it contracts, grows stiff and less movable. This contraction takes place synchronously with abdominal pressure. In normal individuals the whole rectal region is padded with abundant fatty tissue. The nor-

mal peritoneal cul-de-sac has a certain amount of consistence which prevents too great excursions. In patients suffering from prolapse this normal resistance of the different tissues is decreased and the position of the rectum may be altered. Ludloff has studied 111 cases of prolapse. He separated the patients affected into three groups. In the first are adults in the prime of life, nearly all of whom have worked hard. Many of them suffered for years from chronic constipation; others gave a history of typhoid fever or dysentery. They were usually thin, so that the padding of fat was deficient, while the muscular structure of the rectum was weak, and afforded too little resistance to abdominal pressure. Many of them had been in the habit of going regularly in the morning to stool whether they felt the desire for it or not, and of straining violently to accomplish their purpose. In a second group were women either at a period when they were bearing most of their children or at the age of menopause—in other words, at one of those periods in which hernia is most common. The individuals of the third group were children who had suffered from chronic catarrh of the intestine leading to atrophy of the muscles of the rectum and to an excessive abdominal pressure. Heredity plays no small part in the etiology of this trouble. Prolapse of the rectum is a species of hernia in which the peritoneum in front of the rectum presses down further and further, and finally appears, carrying the rectum before it, through the anal opening. It differs from other herniæ simply in the fact that its posterior wall is formed by the rectum itself, the normal supports of the latter having been gradually weakened. Treatment by operation has had a considerable mortality, and has often been followed by recurrence of the trouble because the hernial nature of the affection has not been recognized. For a prolapse which cannot be replaced, whether of the anus or of the rectum, the writer recommends that for two weeks attempts should be made to cure the trouble by massage according to the principles laid down by Thure Brandt. If no improvement takes place in this time anterior colopexy should be performed. If this is without success the rectum should be resected in the manner described by Mikulicz. *Prolapsus coli invaginatus* should be treated according to the principles of invagination of the intestines. If the invagination is situated high up, laparotomy and the Barker-Rydygier operation should be performed. If the invagination is situated low down, a resection according to Mikulicz is indicated. Prolapse of the anus is a rolling outward of the mucous membrane, and is best treated by cauterization, or, if the lesion is very extensive, by an incision according to the method of Treves. Rectopexy, twisting of the rectum as recommended by Gersuny, and all attempts to constrict the rectum by means of silver wire are unreliable and dangerous procedures and ought not to be undertaken. For some weeks after operation defecation should take place while the patient is in the recumbent position.

**Guaiacol in the Treatment of Malaria.**—WHALEN (*Chicago Med. Rec.*, July, 1899) has seen great improve-

ment follow the use of guaiacol in those obstinate cases of intermittent fever in which quinin is without effect. The doses which he used varied from 5 to 45 minims. He began with 5 drops in capsules after meals, and gradually increased the dose unless disturbance of digestion followed. Some of the patients suffered from chills at irregular intervals while taking the guaiacol. Whalen attributed this to the fact that an insufficient amount of the drug was taken, and he continued increasing the dose until the stage of complete toleration was reached.

**Massage of the Stomach and Large Intestine after Ingestion of Therapeutic Liquids.**—VOGT (*Deut. Med. Zeit.*, No. 33, 1899) has ascertained that in the treatment of gastric troubles the effect of the remedies used is greatly increased if massage of the stomach follows ingestion. Light movements should be made from left to right over the whole gastric area in order to bring the liquid in contact with the mucous membrane of every portion of the stomach. To this end the patient should change his position several times during the séance. If the case is one of hypo-acidity, half a pint of normal saline solution or of a one-per-cent. solution of ichthylol should be given. If the latter is chosen it is to be siphoned out by means of a tube after the massage is finished. In cases of hyperacidity a 1 to 200 solution of Carlsbad salts may be employed, or a mixture of 3 drams of subnitrate of bismuth in 6 ounces of water. Bismuth, being very heavy, settles in the greater curvature of the stomach under ordinary circumstances, and therefore has very little effect; hence, massage is especially advantageous after this drug has been administered. If there is too great secretion, solutions of nitrate of silver, 1 to 1000 or 1 to 2000, may be employed. In lesions of the large intestine high injections of oil of the same temperature as that of the body are given and four hours later, the abdomen is massaged. If there is any suspicion of intestinal ulceration massage is contraindicated.

**Treatment of Eclampsia.**—PARISOT (*Rev. internat. de med. et de Chir.*, March 25, 1899) states that the treatment of eclampsia aims to limit the production of toxins in the organism and to facilitate their elimination, when formed, through the skin, through the intestinal mucous membrane, and especially through the kidneys. Milk is the best food as it produces little fermentation, and favors diuresis. Insoluble antiseptics are given, salol, naphthol, benzonaphthol, etc., but according to Deschmaeker the best intestinal antiseptic is saccharin in divided doses, amounting to 1 or 2 grams (15 to 30 grains) a day. Purgatives are more to be relied upon than are intestinal antiseptics. Diuretic drinks, warm or vapor baths to increase the action of the skin, and inhalations of oxygen to increase the rapidity of combustion have their uses. Blood-letting is advisable if an attack is imminent. If there are nervous symptoms 15 to 30 grains of chloral and the yolk of an egg in 3 ounces of milk should be injected into the rectum. If this fails to quiet the patient, chloroform may be administered.

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SATURDAY, SEPTEMBER 2, 1899.

## THE MARINE HOSPITAL SERVICE AND THE QUARANTINE OF OUR WESTERN COAST.

THE daily press at the beginning of the week contained the account of a conflict between the local and national quarantine authorities at the most important ports on our Western Coast. It was also announced that the Secretary of the Treasury considering the national authority paramount in the matter, had given instructions that the regulations made by the Marine Hospital Service should be enforced. It is hoped that this will definitely end the difficulty. With the present incidence of bubonic plague at so many seaports in the East, we cannot afford to permit any loopholes, however small, to exist in our Western quarantine without seriously risking an invasion of the scourge.

The present unpleasant incident at a moment of danger like this is a striking warning as to the evils of the present status of our system of quarantine. The Marine Hospital Service has given ample proof of its efficiency in enforcing quarantine regulations even under the most difficult circumstances. Until the establishment of a Department of Public Health

with a member of the President's cabinet at its head, confident submission to the Marine Hospital authorities is the best guarantee that a city can have that its people will be properly protected. We are very glad to note that during the late unpleasantness at San Francisco, the city's Board of Trade and commercial organizations having the city's interest at heart recognized this fact. Let us hope that the conflict of quarantine authorities at such a time as this will promote the early establishment of a National Bureau of Health, as there is more and more necessity for uniformity of quarantine regulations of the kind that have proven thoroughly protective in practice.

## THE SPREAD OF THE PLAGUE.

THE rumors of the spread of the bubonic plague beyond its first European port of invasion at Oporto have all happily been proven to be without foundation. Especially does it seem sure that no cases have occurred at Palermo, or Naples, or any other port of Southern Italy. Even the suspected cases at Lisbon have turned out to be other diseases falsely diagnosed as plague during the first hours of excitement and alarm. All this, however, does not by any means give the assurance that Europe is out of danger. As the disease has once slipped in unawares, so may it again, and the present calm should lead to the relaxation of not a single precaution against it.

The plague has been particularly characterized during the present epidemic by just such fitfulness, with intervals of apparent cessation that disarm suspicion. We have heard time and again during this past five years that it was under control and no further spread of the disease need be feared, but it was always only to learn within a few months of its recurrence or invasion of adjacent territory.

We called attention sometime ago to the fact that sanitary experts in India doubted if the plague could ever be eradicated from certain of the cities of the peninsula unless extreme measures were taken. The *Indian Medical Record* wrote editorially of the cities of Bombay and Calcutta as "doomed." We have reason to know from those who are in constant correspondence with pathologists in India that the latter consider the invasion of Europe by the plague as practically inevitable. All precautions in the past have not sufficed to prevent the spread of the disease in



India. New foci of infection have been lighted up, notwithstanding the high hopes and confident promises of sanitarians.

It may be noted in our Echoes and News column how insidious has been the progress of the disease. Plague has very probably been epidemic in a mild form in Alexandria since January. The disease has existed at Oporto since the beginning of July, although it was not until the middle of August that the official announcement of its presence was made. This circumstance possibly adds much gravity to the significance of the present situation.

The results of the latest pathological research in the disease are not calculated to allay uneasiness as to the possibility of its spread throughout the civilized world. It has been found that certain animals hitherto thought to be immune are liable to infection. The monkey, for instance, has been recently found dead from plague, and it is suspected that certain of the domestic animals are liable to it, especially in the virulent type of the disease has now developed as a consequence of its long continuance under conditions favorable to its growth.

There is every reason then to sustain the vigilance of quarantine authorities, and let the urgent danger be thoroughly and generally understood. We do not think that we exaggerate the significance of the present state of affairs when we speak thus plainly. An invasion of the Western World by the disease would be an incalculable evil. Every possible effort should be exerted to keep it off. While there is no reason for a senseless scare that would disturb commercial relations, there is every reason to commend the minutest precautions, lest commerce shall become the involuntary but effective carrier of the germs of an awful contagion.

#### THE PRESENT STATUS OF THE WIDAL REACTION.

THE Widal reaction has come to stay. There can be no doubt of this now that the results of the army of earnest workers in this field have been given to the profession. In the early history of the reaction the medical press not infrequently contained reports of isolated cases in which the serum reaction was wanting, but in which clinical symptoms or even autopsy findings inclined the observer to the diagnosis of typhoid. Perhaps even more numerous

were the evidences in favor of other diseases in cases in which the reaction was present. Influenza, malaria, pernicious anemia, acute miliary tuberculosis all contributed instances of undoubted reactions. No attention was paid to the fact that at least three of the above affections are not uncommonly mistaken clinically for typhoid fever, or that without absolute bacteriological findings or an autopsy (or in malaria the presence of the plasmodium of Laveran in the blood) they were not justified in their conclusions that they were not dealing with typhoid.

Then came the announcement that the blood of patients who had once been afflicted with typhoid may retain for years its agglutinative reaction. While this fact of itself was of some value, and necessitated a careful review of all those non-typhoid cases giving the reaction, of far more importance was it as an evidence of immunity to subsequent reinfection, *vis.*: the power attested by this reaction of the blood-serum of a patient afflicted with typhoid fever to destroy the typhoid bacilli entering its channels. In some patients this agglutinative power is exhausted before the patient has well entered upon his convalescence; a relapse occurs which may prove more virulent than the original attack. In others this power prevails over a period which can only be measured by years, three, five, or even longer.

To quote the statistics of Cabot: out of 5798 cases of typhoid, gathered from many sources both at home and abroad, the test performed in a variety of ways, with cultures obtained from many sources and of varied ages, positive reactions occurred in over 97 per cent., truly a remarkable result. But the scientific observer cannot rest satisfied with assurances of a positive character; negative evidence that the reaction does not occur in other diseases must be forthcoming. Cabot was enabled to gather from the same authorities almost as many instances of other diseases in which the application of the reaction gave negative results in fully 95 per cent. Of the remaining 5 per cent. we may rest assured that some of the subjects had had typhoid previously, and this fact of itself would help to better the record. By greater simplicity and unification of technic and by subjecting every case not typhoid but giving the reaction to careful investigation to determine if the disease has formerly existed we may confidently expect an even greater percentage of positive reactions in typhoid

and of negative reactions in our control experiments.

There is one point in which our statistics are somewhat lacking, and that is the percentage of typhoid (the existence of the disease being absolutely proven by post-mortem findings) that exhibits a positive reaction, provided the serum is taken from the body some time before the onset of the death agony. In the experience of the writer, and other observers have narrated the same, the serum when taken just before death does not always give a positive reaction though previous tests may have proved its presence unmistakably and the autopsy showed the characteristic lesions of typhoid.

Following closely on the heels of Cabot come the statistics of Anders and McFarland, published in the *Philadelphia Medical Journal* of April 8, and 15, 1899. These observers, in testing the blood of 230 typhoid patients, relics of the Spanish-American War, found the reaction in 219, or in more than 95.5 per cent. Stengel and Kneass in the "Year-Book of Medicine" (1898) collected reports of more than 2000 cases of typhoid in which the reaction was found in 95.5 per cent., while in almost 1500 non-typhoid cases the reaction was present in only about 1½ per cent. We have, then, a test for typhoid, which, when performed with proper precautions, if not absolutely diagnostic, is certainly one of the most reliable signs of the disease. It is not frequently present in other diseases, if at all, as is the diazo reaction of Ehrlich, nor is it so difficult though far more reliable than the leucocyte count. It has certain limitations, it is true. As a rule, while not appearing during the first few days of the disease, it is manifest before the rose-colored abdominal eruption appears. Occasionally it does not appear before the fourth or fifth week, from which it may be inferred that patients dying of the dangerous complications of the second or third week may never have given a positive reaction. A previous attack of typhoid within a period of one to three years interferes absolutely with the value of the reaction. It is frequently not present if the blood is withdrawn while the patient is at the point of death.

## ECHOES AND NEWS.

**Death Due to Hiccough.**—A patient died of hiccough in the General Hospital at Matteawan, N. Y. The at-

tack began on August 20th, and despite treatment he was not relieved and died of exhaustion on August 25th.

**Hurricane Death-List.**—It is estimated that the bodies of 2500 victims of the recent hurricane at Ponce, in Puerto Rico, have been buried, that 1000 other persons were injured during the storm, and that 2000 people are still missing.

**Death at 116 Years.**—William Gaffney, who died at St. Bazile in Canada on August 24th, was 116 years old. He was born in Ireland and came to Canada eighty-five years ago. He was able to walk about, and had all his faculties up to a few hours before his death.

**Typhoid Fever in Boston.**—There is in Boston an increase of about thirty-six per cent. in cases of typhoid fever during August over the corresponding time in 1898. It is believed that most of the recent cases which have developed have come from some sort of infection through the milk-supply.

**Smallpox in Texas.**—An epidemic of smallpox has broken out in Texas as a result, it is believed, of the bad sanitary condition following the recent disastrous floods in the Brazos Valley. Hundreds of negroes in Bastrop, Brazos, Robertson, and other counties are afflicted with the disease. The State Health Department has taken charge of the situation.

**The Malarial Mosquito Found (?)**.—Major Ross, who was sent to Sierra Leone by the Liverpool School of Tropical Diseases to try to discover the malarial mosquito, has telegraphed to Professor Jones, of the school, that the mosquito has been found. It is believed that the English Government will send medical experts to assist in the researches.

**Hospital Corps Men Needed.**—Much difficulty is being experienced by the War Department in procuring men for the hospital corps and signal service. The increase of the Philippine army to 63,000 men will necessitate a corresponding increase in these services. Fully 2500 hospital corps men will be needed, the calculation being based on an estimate of six per cent. of the combatants being incapacitated for active duty.

**Temperature at Manila.**—Lieutenant W. C. Davis, now at Manila, wrote on June 29th to a friend in Baltimore to the effect that through May and June, the hottest months in the year in the Philippines, the climate was quite comfortable. On the hottest day it was 88° in the shade. At night it becomes cool and blankets are necessary. "It is," he stated, "nothing like as hot at Manila as it is in the summer in the Eastern part of the United States."

**Unpopular Medical Men.**—In New Zealand the medical profession is disliked among the working classes. They never apply to a doctor until all other means have failed, refusing when they do call upon him to give their symptoms, and expecting the physician to make a diagnosis by merely looking at them. Should he be indiscreet

enough to say, "Well, what's the matter?" the patient would grin most disrespectfully and tell the doctor it is his business to find out.

**Professor Grassi's Malarial Studies and the Italian Health Authorities.**—It is considered that so much excellent work on malaria has been done already by Professor Grassi, Lecturer on Comparative Anatomy at the University of Rome, and there is promise of so much benefit to public health in the continuance of his studies, that the Italian Superior Council of Health has granted a fund to defray the expenses of his further investigations into the etiology of malaria and methods of preventing the spread of the disease.

**Fighting Pests with Biologic Aids.**—There is a plague of locusts afflicting India in addition to that 'unfortunate country's other ills, and the inhabitants are trying a new method in fighting it. It has been found that a certain fungus is very effective in disposing of the insect pests. This fungus is now being distributed to the farmers of locust-infested districts, by the British Army Medical Service in India. It is hoped that its presence will succeed in inhibiting the almost annual invasion by the destructive insects.

**Prizes for Life-Saving Devices at Sea.**—A series of prizes for this very commendable object are to be given by members of the Pollok family. Certain members of the family were lost last year by the sinking of the Bourgoigne and the present offer is dictated by that circumstance. The prizes are to be awarded at the Paris Exposition next year and the competitors of every nationality are expected to take part. Mr. William Ker of Washington, D. C., has been selected as secretary of the committee in charge of the competition in America.

**Artificial Culture-Medium for Lepa Bacilli.**—Dr. Carrasquilla of Bogota, United States of Columbia, well known for the invention of a lepra serum, with which he has been experimenting, announces that he has been able to cultivate lepra bacilli outside the human body on artificial media. This has not been successfully done up to this. The media Dr. Carrasquilla has had his success with were sloped human blood-serum and beef bouillon prepared according to the formula in general use in bacteriological laboratories in France. The formula may be found in French text-books of bacteriology, especially Thoinot's.

**Quinin in the United States Army.**—More than 125 million grains of quinin have been taken by United States soldiers during the past year. It is said that some of the military patients in the army hospitals in Cuba and Puerto Rico took as much as 300 grains a week during several weeks. Hardly any of those who were in service in the West India islands failed to take some quinin during their stay. A military correspondent writing from Puerto Rico recently said that practically none of the soldiers had been entirely exempt from malarial disturbances on that island and that while the malaria was usually not severe it was very obstinate.

**Smallpox in New York State.**—The State Board of Health is sending circular letters to the Health Boards of the different cities, calling attention to the prevalence of a mild form of smallpox in the central and western parts of the State. It is stated that the spread of the disease at this time, as was the case a year ago, may be attributed in a large degree to the fact that many cases of smallpox were mistakenly diagnosed chicken-pox, and it is advised that the various city boards adopt and enforce rules requiring that all cases of supposed chicken-pox be reported promptly to them, in order that they may be kept under observation, and quarantined, if necessary, until all doubt is at rest.

**The Continental Anglo-American Medical Society.**—This association, which is composed of English-speaking medical men (British and American) who practise on the Continent, held a meeting at Portsmouth during the recent meeting of the British Medical Association. Professor William Osler of Johns Hopkins, who is one of the vice-presidents of the Society, occupied the chair. A number of the most prominent members of the medical profession in England were present. Speakers insisted on the evident advantage to be derived from English practitioners being acquainted with the physicians to whom they might have occasion to send patients visiting the Continent. Professor William Osler dilated on the advantage of being an Anglo-American-Canadian when events were tending to bring all branches of the English-speaking world in closer touch with one another.

**Insanity among Indians.**—An expression of opinion in this matter from one who ought to know of what he speaks, and that is of a great significance to medical men, we take from a recent number of the *Scientific American*: "United States Commissioner William A. Jones makes the interesting statement that 'a full-blooded Indian lunatic never lived.' After inspecting the site recently purchased by the Government for an Indian Insane Asylum in the Indian Territory, he says, 'The occupants of the hospital which will soon be opened will all be mixed breeds. Probably there never was a case of insanity in any tribe until the malady was introduced by mixing with the whites.'" It would be interesting to know what reasons experts in mental diseases give for this exemption of the Indian from mental trouble. Now that it seems definitely sure that insanity is largely on the increase in civilized communities the theories of explanation would be especially of interest.

**The Utilization of Putrid Meat.**—In France nothing is allowed to go to waste. Meat unfit for food and the bodies of animals that have died of disease are extensively used for the manufacture of superphosphates. The meat is placed in a vat containing sulphuric acid, which separates the resulting nitrogenous product from the fat. The dead animals are thrown whole into covered lead-lined vats full of sulphuric acid of 66° Beaumé. If these animals have died of anthrax or glanders they are cut up before being thrown in. In the course of forty-eight hours the fat alone remains, and the animalized



sulphuric acid, rich in nitrogenous substances, is drawn off and sent through an underground conduit to the superphosphate factory. Thus, instead of the unsanitary method of burying such putrid substances directly in the ground, they are effectually disposed of by the complete destruction of all injurious germs; and there results a product available in the manufacture of a valuable fertilizer.

**Mine Accidents and Fire-Damp.**—Professor Haldane, Lecturer on Physiology at Cambridge University, England, has had the opportunity recently to investigate the causes of death among the miners in an explosion in an English mine. Out of fifty-eight victims only two were injured enough to cause death; the remaining fifty-six were asphyxiated by the products of combustion present in the air after the explosion, and by the absence of oxygen. The effective cause of death in the fatal cases was principally the presence of large quantities of carbon dioxide in the air. It is the presence of this gas, too, that makes the work of the rescuers so difficult and dangerous. The gas is absolutely odorless and does not betray its presence until men are overcome by it, when often it is extremely difficult for the others of the party to carry them out of danger. Professor Haldane has found that mice are extremely susceptible to carbon dioxide and succumb when such proportions of the gas are present in the air as men endure very well. He suggests, then, that rescuing parties should carry mice with them (they are, as a rule, not difficult to procure around mines) to furnish an index of the presence of carbon dioxide in the atmosphere just short of the danger-limit. They would serve as a warning and changes in the direction of the air-current of the mine might be made after this indication, which would eliminate some of the danger.

**The Nobel Prizes.**—It is well known that the Swedish inventor of dynamite, the late Alfred Nobel, left a very large sum of money to be distributed in prizes for scientific and other advances. His executors now announce that the estate amounts to \$7,500,000, which has been invested, and \$40,000 will be available for each of five annual prizes to be given for discoveries and inventions in physics, chemistry and medicine, and for the most deserving work in literature respectively. The fifth prize is to be awarded to the person who has done the best work for the fraternization of nations, for diminishing armies and the propagation of peace during the year. It is well known that Nobel himself, though the inventor of dynamite and a great manufacturer of high-power and smokeless explosives was an ardent advocate of universal peace and the establishment of international arbitration. He even persuaded himself that he had in his invention of the more powerful explosives advanced the coming of the millennium of international fraternity by making war more terrible and more absurd. The first distribution of these prizes will take place with the beginning of the new century in December, 1901, as directed by the donor's will. The distribution day annually is to be December 10th, the anniversary of Alfred Nobel's death. The prizes are to be decided by certain institutes founded for the purpose

in Sweden. Recommendation of contestants for the prizes is to be made by various scientific and literary societies and academies and universities designated by these institutes. Competition is, of course, open to the world and besides the \$40,000, each prize-winner will receive a diploma and a gold medal bearing a relief representation of the prize founder. Personal application will be entirely useless and application can only come through one of the designated scientific or literary institutions. As further details are made known they will be noted in these columns.

**Obituaries.**—Dr. John J. Linson died on Sunday, August 27, at Tarrytown, N. Y. He was born in New York City in 1827, and was a graduate of the College of Physicians and Surgeons of New York. After having served at the front with distinction during the early part of the Civil War as the surgeon of the Sixth New York Heavy Artillery, he became surgeon of the Provost Marshal's office in the New York district, and invented the method of marking volunteers with nitrate of silver, which proved so effective in preventing the wholesale bounty jumping so common at one period of the war. He was president of the Westchester Medical Society for three years.—Dr. Max Thorner, a brilliant pupil of Dr. Virchow, died at Cincinnati, Ohio, on August 27th. He was only thirty-nine years old. He was a laryngologist of note, and held the chair in that branch of medicine at the Cincinnati College of Medicine and Surgery. At the last meeting of the American Laryngological Association he was unanimously elected a Fellow, a rare honor, as the association's membership is limited to seventy-five. He was also a Fellow of the American Rhinological and Otolological Society.—Dr. Josef Mayer, sometime Surgeon-General of the Polish Army, and Professor, Dean, and Rector of the Jagellonian University, Cracow, died recently, aged ninety-one. He was a member of the Polish Academy of Medicine, of which he was president for many years, and he was a member of a number of other societies, Polish and foreign, a member of the Austrian House of Lords, and for a long time a Deputy for his district, and a Town Councillor for Cracow. In his person was embodied nearly a century of the intellectual life of Poland. Born at Cracow in 1808, he studied in the University of that city, and took his doctor's degree in 1831. He took part in the Polish rising of that year, serving in the army of his country as a medical officer. He was the author of nearly eighty books and papers on the physiology of the nervous system, physiology of the senses, the length of man's life, the influence of meteorological conditions on mortality, etc. He had been a professor at the University of Cracow for more than sixty-six years, having been appointed to his chair while Cracow was an independent duchy, and retaining it after the city and university passed under control of the Austrian Government.

**The Plague Situation**—Two items of very great interest as regards the present plague situation we copy from the *British Medical Journal* for August 19, 1899. They serve to show very forcibly the insidious character of the

disease: "The appearance of the plague in Portugal is ascribed to packages from Bombay landed in Oporto early in July, 1899. The latest advices mention 36 cases of plague and 6 deaths; but Reuter's Lisbon correspondent states that on August 11th 'several cases of plague have been reported in the central quarter of Oporto. It is said that since the first outbreak of the epidemic there have been 27 cases and 11 deaths.' All ports in the Azores are closed to Portuguese vessels, and the Brazilian Government has imposed quarantine on vessels which left Portuguese waters after July 1st. The Spanish authorities are in the greatest perturbation, however, and they have good reason to be alarmed. Many Spanish families are at watering-places in Portugal, and the authorities are afraid that their return may carry plague to Spain. The sanitary authorities in Spain have decided to impose quarantine on arrivals from all Portuguese ports, to establish five lazarettos on the frontier, and to interrupt all communications both for goods and passengers between Spain and Portugal until the lazarettos are prepared. There may be some consolation in the fact that the cases are not numerous nor is the disease spreading. This is confirmed by the fact that the death-rate of Oporto is not abnormal. As usual, notwithstanding the official announcement, many residents in Oporto and throughout Portugal are sceptical as to the real existence of plague, and are prepared to deny its presence. This is the usual condition of things, as in every country and town where plague has appeared we find persons ready to suppress the truth, and deny the possibility of its presence." From Alexandria recent news is of similar and epidemiological interest: "A telegram from Alexandria, dated August 13th, reports that after a week's interval 1 fatal case of plague was reported on August 10th, and that 3 new cases and 2 deaths from plague have occurred during the week ending August 13th. A report dated July 25, 1899, has been addressed to the Constantinople Sanitary Administration by the Ottoman sanitary delegate (Dr. Duca) in Egypt on the supposed origin of the present outbreak of plague in Alexandria. Dr. Duca states that Dr. Doxara, in January, 1899, saw a case of buboes with fever in Alexandria. During the ensuing months several such cases occurred, but he did not draw the attention of the government to the fact. When the plague, however, was officially declared in May, 1899, Dr. Doxara reported the cases of bubo with fever he had observed during the previous months. The cases were sporadic, of a mild type, and chronic in their nature. Dr. Doxara states that owing to the slowness of the spread it might appear that the mild type of cases he mentions were not plague nor in any way connected with it, but he draws attention to the fact that in all the epidemics of plague occurring between 1835 and 1843 in Alexandria, similar mild cases of plague always preceded the outbreaks of true plague. Dr. Doxara remarks that there has been direct communication between Bombay by steamers of the Italian 'Rubattino' line ever since November, 1898. Many passengers were landed from these boats—including the passengers of the s.s. 'Meahalla,' on board which a stoker

developed plague—and went to various parts of the country. In addition, thousands of sacks of grain from Bombay were landed on the wharves at Alexandria during the early part of this year. Dr. Doxara is of the opinion that the present outbreak of plague has not occurred suddenly, but that the disease has been present in a mild form (*pestis minor*) for several months before it was diagnosed or officially declared to exist in Egypt. As a guide to the period of the year at which plague is apt to prevail most seriously in Alexandria, the following extracts from observations extending over ten years, 1834-1843, is interesting: January, 329; February 1112; March, 4952; April, 2936; May, 1799; June, 547; July, 216; August, 100; September, 15; October, 18; November, 63; December, 195. It would appear that when the plague prevails at Alexandria it is wont to reach its maximum of virulence during the spring and to subside almost to vanishing point in the autumn." At Mauritius the plague continues to rage with unabated virulence. The British Colonial Office has received information that during the week ending August 19th, 40 new cases of plague and 32 deaths occurred. At Hong Kong the number of new cases of plague which occurred during the week, August 14th to 20th, was 20. During the same period there were 20 deaths from the disease. A telegram to Shanghai from the British Consul at the treaty port of New Chang, in North China, reports that the bubonic plague has appeared there. It is feared that the bubonic plague is epidemic on the Gold Coast of Africa, carried there from the neighboring French colonies, where it is known to exist. A French priest is reported to have said that 13 of the fathers and sisters, and upward of 40 European merchants and officials, had succumbed within the last three months. The latest reports from Europe show that plague exists only in Portugal, and is not spreading there to any extent. A case is said to have occurred in these last few days in the prison at Oporto, and this may prove of serious import.

#### MEDICAL MATTERS IN NEW YORK.

NEW YORK'S ACCOMPLISHED POLICEMAN—AN EPIDEMIC OF DEATH—THIEF DIES IN JAIL—SCIENTISTS TO MEET IN NEW YORK—DEATH OF DR. M'LEOD—CLINICAL INSTRUCTION FOR FEMALE MEDICAL STUDENTS—OFFICIAL HOSPITAL INSPECTIONS—REGULATED CHARITY.

GEORGE H. QUACKENBOS, a patrolman on the New York police force, reads Greek, understands the sign language, is a good telegraph operator, has filled the chair of rhetoric in Seton Hall, New Jersey, and lastly holds the degree of Doctor of Medicine of the New York University Medical College. He is the son of Professor George W. Quackenbos, Professor of Greek and Latin at De La Salle Institute. When Governor Roosevelt was president of the Police Board he appealed to educated men to become policemen. Quackenbos, reading of this in the papers, made application and joined the force. Some time ago a contributor to one of our medical journals presented a paper in which he demonstrated that but

seventeen per cent. of medical graduates continue in the profession of medicine. All the rest go after graduation into other pursuits. Quackenbos is probably the only man who has forsaken medicine to wear the uniform of "the finest."

Mrs. Bathje, a resident of Brooklyn, seventy-two years old, died on August 26th from a fractured skull due to a fall from the window of her daughter's apartments. The daughter, Mrs. Reynolds, has lost by death within the last six months her mother, father, husband, and three children.

Some time ago the New York Health Board received a number of complaints of thefts committed by a man who represented himself to be "Dr. Wood, a Health-Board inspector." The man gained access to many houses, and the police estimate the aggregate amount of his thefts at about \$20,000. He recently left New York, and transferred his operations to Newark, N. J. Here he was arrested on August 17th, and extradition papers were prepared for bringing him here for trial. However, he died in jail of Bright's disease on August 22d.

The next meeting of the American Association for the Advance of Science will be held at New York, June 25-30, 1900. Its officers are: President and treasurer, Robert Simpson Woodward, Dean of the School of Applied Science of Columbia University, and Professor of Mechanics in the same university; permanent secretary, L. O. Howard of Washington, Government Entomologist; general secretary, Charles Baskenville of Chapel Hill, N. C.; secretary of the council, William Hallock of New York.

Dr. Samuel B. McLeod died on August 22d at his home at 339 West Twenty-third street. He was injured several weeks ago in alighting from a Madison avenue trolley-car, but it was thought that he had recovered from the accident. It aggravated an old heart lesion, however, to which the doctor succumbed. He was a cousin of the late Dr. C. R. Agnew. His father was the Rev. J. N. McLeod, for forty-four years pastor of the Reformed Presbyterian Church on West Twelfth street. Dr. McLeod graduated from the New York College of Physicians and Surgeons, was for two years vice-president, and afterward for five years president of the New York County Medical Association. He was also vice-president and president of the New York Medico-Legal Society, a permanent member of the American Medical Association, consulting physician to the Marion Street Maternity Hospital, and consulting physician to the Northern Dispensary.

The medical instruction to be given in future at the New York Infirmary for Women and Children will consist of special courses for women graduates and undergraduates, under the charge of former professors and instructors of the Medical College of the Infirmary which was closed last June. The fine opportunities for study afforded by the hospital wards and by the dispensary and out-practice services, heretofore absorbed by the students of the college, are now open to all women students of medicine.

Comptroller Coler and President John W. Keller of the Department of Charities visited Bellevue Hospital and the institutions on Randall's and Blackwell's Islands on August 22d. Both these gentlemen are anxious to put a stop to the granting of city money to private institutions, and when the budget of 1900 is made up it is intended to make a strong fight to have the grants of public money reduced. It is proposed to stop the sending of rich persons to private hospitals at public expense when there is room for them in the institutions controlled by the Department of Charities. This department has fully equipped modern wards and pavilions for the treatment of every class of disease. These wards are at times practically empty but the expense of maintenance goes on whether there is one patient or twenty in them, being reduced only by the cost of food for patients. At the same time the municipality is paying large sums for the treatment of patients in private hospitals. Mr. Coler and Mr. Keller believe that the reform in the dispensation of charity by the city should begin with this abuse and it will be one of the things for which they will contend in the Board of Estimate.

In the communication sent by the New York State Board of Charities to Comptroller Coler in answer to his request for advice—which was noticed in this column last week—it was further observed that when a group of persons organize a charitable institution, the natural and usually sufficient check upon its undue development is the necessity resting upon them of giving or securing from others the necessary funds for its maintenance. This necessity is the natural check upon the tendency of all institutions to grow indefinitely, to admit children who ought not to be received and to retain children who would be better off if placed in families or returned to their parents. The securing of public funds removes this natural and wholesome safeguard against undue growth. At present several of the large institutions whose payments have met not only all the current expenses of every nature but have left an excess to be applied to the reduction of indebtedness, or the erection of larger buildings are wholly supported by the city. In summing up it was stated that in the opinion of the committee who formulated the answer to the Comptroller the plan of granting public subsidies to private institutions has inherent and grave dangers which it is impossible to obviate, and that no plan can be devised which will insure wholly satisfactory results. Appropriations of public money to private institutions inevitably tend to diminish and discourage private charity. The present system confuses the duties of the public authorities and of private citizens and private organizations, and prevents any clear division of the field as between public and private effort. It encourages the growth of privately managed but publicly supported charities to an unlimited and harmful extent. Though often apparently economical in the beginning it is always in the long run enormously expensive. It indirectly prevents a proper equipment and maintenance of the public charitable institutions. And lastly, its permanent disadvantages far outweigh any immediate temporary benefit that may be derived when the system is first established.



## CORRESPONDENCE.

## TRANSACTIONS OF FOREIGN SOCIETIES.

*German.*

**MALIGNANT NON-SEPTIC RHEUMATIC ENDOCARDITIS—FREEZING-POINT OF THE BLOOD AS A MEASURE OF THE COMPETENCY OF THE KIDNEYS—SIGNIFICANCE OF THE STRUCTURE OF THE RENAL ARTERIAL SYSTEM.**

At the Berlin Medical Society on June 21, 1899, Litten read a paper on the malignant non-septic form of rheumatic endocarditis. The septic form of endocarditis may be produced by pneumococci, gonococci, typhoid bacilli, tubercle bacilli, diphtheria and influenza bacilli, colon bacilli, streptococci, staphylococci, etc. The ordinary rheumatic endocarditis is usually spoken of as the verrucose form. In the latter there is a tendency for fibrin masses to form upon a valve. These masses undergo a benign metamorphosis. They do not entirely disappear, but shrivel up so that they are relatively harmless. This form of endocarditis as all others is produced by micro-organisms which are seldom found because the opportunity to make a post-mortem examination in a recent case rarely comes to pass. Simple rheumatic endocarditis affects usually the left side of the heart in contradistinction to the fetal and malignant forms. The explanation of this fact is found in the necessity for oxygen which the germs exhibit. As the left side of the heart is supplied with freshly oxygenated blood germs can live and develop in this side of the heart far better than in the right side. In the fetus on account of the absence of air in the lungs and the presence of the foramen ovale the blood in the two sides of the heart contains practically the same amount of oxygen. As the right side of the heart does more work in the fetus, it may be supposed that it is more liable to injury, and hence offers a more favorable seat for the development of the micro-organisms. Simple rheumatic endocarditis is not a complication of acute rheumatism but is a localization of the morbid process. This form of endocarditis never gives rise to abscesses or malignant metastases. If infarcts are caused they are not infectious. It exhibits a great tendency to recurrence. It is often complicated by fibrinous endocarditis. It has no characteristic type of fever as have the malignant forms, for the reason that it runs no specific course, and new lesions are frequently superimposed upon old. In the swollen and painful joints is found a clear or slightly turbid but never purulent fluid. Another diagnostic point is the prompt effect of the salicylates upon the general condition and the swelling about the joints. Endocarditis occurs, according to different observers, in from sixty to seventy-five per cent. of the cases of acute rheumatism, but apparently every heart which gives a systolic murmur is counted by them as rheumatic.

The term "ulcerative" endocarditis is less suitable than the term "septic." Oftentimes the patient dies before the papillary growths upon the endocardium have advanced sufficiently to undergo necrosis. This form of disease is due, as already stated, to the action of various cocci, bacilli, etc. It occurs in the right side of the heart

as well as in the left. The infarcts produced are rarely benign, and they usually lead to metastatic abscesses. Microbes which cause septic endocarditis usually come from broken-down thrombi in the veins; hence the endocarditis is merely a symptom of the pre-existing disease. If pericarditis co-exists, it is almost always suppurative, not fibrinous. This form of endocarditis is often complicated with hemorrhagic nephritis. Etiologically, its occurrence is most often due to diphtheritic inflammation of the site of the placenta after abortion or normal birth; to diphtheritic inflammation of the intestine, of the soft palate, of the vulva, or of the uterus; to severe affections of the adnexa with thrombo-phlebitis; to phlegmonous parametritis; to suppurative inflammations of the neck after scarlet fever, or typhoid fever. Clinically speaking, septic endocarditis runs an acute course, usually terminating in death. The temperature is high; there are irregular chills, either daily or every second day, or at no stated intervals. Hemorrhages in the skin or retina occur in eighty per cent. of the cases. Various kinds of suppurative processes appear in the skin and eye, such as severe pemphigus, multiple abscesses, deep necrosis of the skin with hemorrhages, panophthalmitis. The spleen is invariably much enlarged, although sometimes it cannot be felt during life. It may contain abscesses and be surrounded by fibrinous inflammation so that a distinct râle may be heard and felt on respiration. This form of endocarditis causes changes in the pulse, in the activity of the heart, and in the respiration of such striking character that they are easily differentiated from the symptoms of the rheumatic form in which the variations take place slowly. The disease leads rapidly to death. In the blood immediately after a chill are found the same micro-organisms as are found in the fluid aspirated during life from the joints, and post-mortem in the cardiac lesions. The important point in etiology is the presence of necrotic thrombi in the veins.

The third form of endocarditis, to which LITTEN has given the name of malignant rheumatic endocarditis, usually terminates in death but is not septic. The severe character of the infection appears early in the disease, and to a certain extent simulates in this respect that of the septic form. The objective signs in the heart are like those of the simple rheumatic form, only more extensive. There may be a feeling of oppression and dyspnea. The patient soon becomes anemic, cyanotic, or unconscious. The fever may be slight or it may be very high, of an irregular character, and interrupted by chills. There is swelling of the spleen. There is a positive diazo-reaction of the urine. Often cutaneous, mucous, and retinal hemorrhages occur. Hemorrhagic nephritis is a common symptom. The metastases which are formed are invariably benign, giving rise to simple infarcts and anemic necrosis. The disease lasts for many weeks, and terminates in death after severe cerebral symptoms.

The writer stated that he had treated twenty patients, nineteen of whom had died, and the remaining one was still very ill and likely to die. This form of endocarditis develops in the course of an acute rheumatism or an

acute rheumatism or an acute rheumatism complicated with chorea. One diagnostic point is the prompt effect of the administration of salicylates upon the general affection. If the cardiac lesions, instead of remaining stationary or diminishing, show a tendency to increase and grow worse, the case will probably be found to be one of malignant and not one of benign endocarditis. Fluid aspirated from an affected joint is never purulent. After the administration of salicylates and improvement of the condition of the joints, the patient may have a sudden chill or cutaneous hemorrhages may occur causing the physician to examine the heart. In this form of endocarditis the right side of the heart may be affected as well as the left. The fever presents no regular type. There are no abscesses in the skin or in the eye. Retinal and cutaneous hemorrhages are unfavorable symptoms. There may be an enormous increase in the pulse-rate, possibly to 160 per minute; cardiac irregularity, palpitation, and marked dyspnea. Other patients do not have these extreme symptoms, or only after exertion. The swelling of the spleen can usually not be made out during life. After several weeks the patient becomes very anemic and exhausted; symptoms of oppression and dyspnea and cyanosis set in or cerebral symptoms develop and death follows. At post-mortem examination no suppurative processes nor thrombophlebitis will be found. Such metastases as exist will be of a benign character. Fibrinous pericarditis is frequently an accompaniment. There are usually numerous hemorrhages into the serous membranes. In two cases Litten's assistant was able to demonstrate the presence of very small cocci in the blood. The writer emphasized the importance of recognizing this malignant form of endocarditis at an early stage.

At the session of June 21st, RICHTER and ROTH presented the results of their experiments in reference to nephritic incompetency. The desirability of recognizing whether the kidneys are satisfactorily performing their duties needs no argument. It was formerly supposed that if they were working properly a certain amount of urea, chlorids, etc., would be excreted daily; that, therefore, an examination of the urine would show whether renal incompetency was present or not. This is not always the case for the reason that it is not the absolute work of the kidneys which is important but the relative work—that is, the amount of work performed relative to the amount demanded. No matter how much work done there is renal incompetency if the kidneys are not able to prevent the retention in the body of products of metamorphosis. Hence the desirability of being able to determine this by examination of the blood. Such an examination to be of practical importance must be simple and easily carried out. Koranyi has recommended such a method. It consists in testing the molecular concentration of the blood-serum by ascertaining its freezing-point. Blood-serum possesses normally a constant molecular concentration. During the process of metamorphosis in the body large complex molecules of albumen are broken up into numerous small molecules. Molecular concentration of the blood is thereby increased.

The kidneys constantly counteract this tendency by excreting from the blood a concentrated fluid, thereby preventing the accumulation in the blood of an excess of the products of metamorphosis; hence, the constant normal freezing-point of the blood is a sign of the sufficient action of the kidneys. If the kidneys fail in their activity, there is an abnormal molecular concentration of the blood which is plainly shown by an abnormal sinking of the freezing-point. The freezing-point of normal blood is not more than  $0.56^{\circ}$  less than distilled water. If it is lower than this it is an indication that there is renal incompetency. More recently it has been found that insufficient oxygenation of the blood will also reduce its freezing-point. But this error can be eliminated by shaking the blood with oxygen in a test-tube. If the low freezing-point is due to lack of oxygen, it will rise; if it is due to renal insufficiency, it will not be affected by the oxygen.

At the session of June 28th, ZONDEK showed macerated preparations of the arterial system of fifteen kidneys and called attention to certain facts in connection with the vascular supply of the kidney which have an importance in connection with the surgery of this organ. The frequent existence of a second artery to one pole, may explain why tuberculosis is so often limited in its distribution in this organ. This arrangement of arteries is also to be borne in mind in nephrectomy, as its neglect has given rise to serious hemorrhage. The arterial supply of the capsule is distributed over the anterior and posterior sides of the kidney and to its two poles. Paraneuritic abscesses are generally found in one of these four positions. The freedom from anastomosis of all the little arteries in the substance of the kidney explains the occurrence of multiple abscesses. In resecting portions of the substance of the kidney the operator should excise a pyramidal or cone-shaped piece, in order to avoid wounding the arteries which radiate from the hilum. In nephrotomy the incision should not be made down the back of the kidney as in an autopsy, but in the middle third of the lateral surface, parallel to the median line of the dorsum, and about one-third of an inch removed from it. The incision should be oblique with reference to the renal surface, the knife being slanted downward toward the hilum, so as to open into the pelvis as directly as possible. This incision gives the best chance to find a calculus when the pelvis is small, and avoids all large arterial branches, and thus diminishes the risk of hemorrhage and of subsequent colic, and economizes the renal tissue to the greatest possible extent.

## SOCIETY PROCEEDINGS.

### THE BRITISH MEDICAL ASSOCIATION.

*Sixty-seventh Annual Meeting, Held at Portsmouth, England, August 1, 2, 3, and 4, 1899.*

(Concluded.)

#### SECTION ON STATE MEDICINE.

DR. J. GROVES in opening the discussion on PERSONAL COMMUNICATION OF TUBERCULOSIS AND THE MEASURES AVAILABLE FOR ITS PREVENTION, said that twenty-five years ago phthisis was supposed to

be a purely hereditary disease: now it is known to be communicable, and as such must necessarily come under the cognizance of the sanitary officers. But authorities are not yet agreed as to the degree of this communicability. He was not at present in favor of notification, which would result in the breaking up of families. Phthisis is on the decrease in consequence of better ventilation and sanitation.

DR. A. NEWSHOLME said that all present views of phthisis are founded on the idea of its communicability. Notification should be enforced on quite different lines from those applied to the more acutely infectious diseases. It is a communicable disease, but its communicability is much more manageable than that of other infectious diseases, seeing that it has to do almost solely with disinfection of the sputa. The medical officer of health should be associated with the family doctor in notification. The advantages derived from inspection would give the greatest success in the prevention of phthisis. There is in Brighton a modified system of notification. Dr. Newsholme gave particulars of the visits recently made in fifty-six such cases. He advocated the giving of a fee for voluntary notification, which he wished to be adopted. Visits of the medical officer of health should be confined to those cases in which the medical man attending makes no objection. In certain districts compulsory notification might be even now adopted, without penalty in the event of the practitioner objecting to notify.

DR. NEWSHOLME spoke on the

#### MEANS OF PREVENTING THE SPREAD OF INFECTION IN ELEMENTARY SCHOOLS.

Other measures are even more imperative than the medical inspection of schools and scholars. These are the provision of prompt medical attendance upon children who become ill, in order to secure an early diagnosis, with proper treatment and isolation if necessary. Medical inspection of scholars, with the bacteriological investigation of their discharges (nasal, aural, etc.), has only a limited utility in preventing the spread of infection. To combat such diseases must be chiefly the affair of parents and private medical practitioners. Absentee scholars who are ill should be visited at home for diagnostic purposes alone by the medical officer of the school; but the public is not yet prepared for such an innovation. The speaker described and exhibited the forms used in Brighton for the notification of infectious diseases by school authorities, and stated the advantage accruing from their use, especially in the obtaining of an increased school grant.

DR. H. R. KENWOOD considered that all pupils in schools should be examined twice a year at least in non-infectious times; whereas, the inspection might be made daily in times of epidemics. Prizes for maximum attendance should be abolished, as children, in order to obtain them, often attend when for medical reasons they should be at home, if not in bed.

DR. A. NEWSHOLME concluded by moving a resolution requesting the Council of the British Medical Association to make representations to the Education Department, urging upon the department the necessity, from the

standpoint of the public health, of authorizing medical officers of health to inspect all school premises, and to inspect or secure the inspection of scholars when the prevalence of infectious disease is judged by him to make such an inspection desirable. The resolution was carried unanimously.

DR. J. K. BARTON read a paper in which he insisted that the prevalence of decayed teeth in children is due to artificial feeding with improper food. The use of sterilized pure cow's milk would prevent such decay of teeth, which is especially prevalent among rickety children. The examination of the teeth of children in schools is done too late to prevent the decay, which is due to improper feeding in infancy.

#### SECTION ON DISEASES OF CHILDREN.

The second meeting of this section was opened by DRS. A. M. GOSSAGE and J. A. COUTTS on

#### THE ETIOLOGY OF CONVULSIONS IN INFANCY.

They pointed out that true convulsions are much more infrequent than is generally supposed. Predisposing causes are more important than exciting causes. The instability of the infantile nervous system is one cause, but there are others, such as inherited neurotic conditions and rickets. The alleged frequency of teething and digestive disturbances, convulsions as merely the equivalent of signs at the onset of acute diseases and exanthemata, and the convulsions in asphyxia were discussed.

DR. HUGH JONES regarded all convulsions as symptomatic only. Of recent years there has been a fall in the number of recorded deaths from convulsions, corresponding with a decrease in other diseases, and with improved general sanitation. Dr. Jones attributed the majority of the cases to bad feeding. A symptom is not the cause of death, and certificates of death should be accurate and precise. Death cannot be combated by registering symptoms.

MR. JOHN LANGTON, who read a paper on  
THE TREATMENT OF INGUINAL HERNIA IN INFANCY AND CHILDHOOD,

gave statistics regarding the relative frequency of the condition in the two sexes, and touched on its prevalence in children of the Jewish race. He thought the diagnosis simpler in infants than in older children. He discussed the frequent association of umbilical hernia with other hernias. He laid great stress on the proper dieting of children suffering from this affection, and considered that phimosis does not play an active part in the production of hernia. He discussed the questions of exercises and mechanical forms of support and condemned the wool truss. He also spoke in detail with regard to different kinds of trusses, the proper instruction of the patient's parents or guardians, and the length of time during which a truss should be worn. He discountenanced operation prior to six years of age, except under pressing circumstances, and enumerated the cases in which operation is necessary. He preferred kangaroo tendon for sutures.

#### SECTION ON ANATOMY AND PHYSIOLOGY.

The address of the President, DR. J. J. CHARLES, was on



## THE RECENT ADVANCES IN PHYSIOLOGY.

The speaker referred in detail to the numerous minor discoveries which have been made in this science during the past year or two. He gave great credit to English physiologists, who have of late years contributed their full share toward the advancement of the science, so that it is no longer necessary for a student to study physiology in Germany if he would place himself in the best position to obtain full command of his chosen specialty.

A discussion on

## THE INTERACTION BETWEEN THE OVARIES AND THE MAMMARY GLANDS

was opened by MR. STANLEY BOYD. He showed that removal of both ovaries in some cases caused apparently a total disappearance of well-marked cancerous growths. The most marked case was one of a woman who, twenty-eight months after the operation, was apparently in perfect health and free from cancer. In other cases quoted the success was only partial; the growth at first underwent atrophy, and the patient's sufferings were for a time relieved, but this was later followed by recurrent growth in different parts, and finally by death. In other cases, especially those of "acute cancer" in young people, the operation seemed to have no marked effect. The administration, by the mouth, of the extract of thyroid gland appeared to produce uncertain results in some cases; the patient's condition was sometimes even made worse, while at other times there seemed to be slight improvement or no marked effects.

DR. AMAND ROUTH showed that ovulation proceeded normally after removal of both mammary glands, that lactation is unaffected by the removal of both ovaries during pregnancy, and that these combined facts establish fairly well the belief that there is no essential interaction between the ovaries and the mammary glands. From a case quoted it was shown that lactation was perfectly normal in a woman whose spinal cord was destroyed by an accident at the level of the fifth and sixth dorsal, proving that spinal conveyance of the pelvic influence is not the essential route. Further facts tend to show that lactation is due to some chemical change in the blood, and that this change is almost certainly in the uterus and not in the ovaries, and is practically an internal secretion.

MR. W. R. WILLIAMS, F.R.C.S., observed that cancer is known to subside under various states of constitution which reduce the general health to its lowest ebb.

MR. CANTLIE asserted that when the ovaries physiologically waste in a patient the subject of cancer the disease assumes a different state to that seen when the ovaries are normally active.

DR. PEMBREY referred to instances in which the ovaries of animals being diseased the development of the mammae has been distinctly affected. MR. STANLEY BOYD, in replying, repudiated any suggestion that his operation is to be considered a "cancer cure."

## SECTION ON PSYCHOLOGY.

The Presidential address was given by DR. DAVID NICOLSON, C.B., Lord Chancellor's Visitor in Lunacy, on the question,

## CAN THE REPROACHABLE DIFFERENCES OF MEDICAL OPINION IN LUNACY CASES BE OBIATED?

It was pointed out that the right estimate of conduct and of motives requires prolonged and careful observation, and this applies with peculiar force to judgments formed regarding cases of mental disease. The medico-psychologist has to use neurological methods—tests regarding reflexes, sensibility, etc.—as well as those belonging more properly to the domain of psychiatry. Particularly difficult to detect are cases of malingering or so-called feigned insanity, which often require prolonged watching and examination at an asylum before a definite conclusion can be reached. All medical men signing lunacy certificates should have asylum experience in the study, care, and treatment of insanity. It is a deplorable fact that owing to want of such knowledge and experience among the body of general practitioners cases of lunacy with suicidal and homicidal, or other dangerous impulses pass largely unrecognized in the community.

DR. SAVAGE opened a discussion on

## THE TEMPORARY CARE OF INCIPIENT CASES OF INSANITY,

pointing out the desirability of extending some of the provisions of the proposed act of last year as regards the certification, readmission, and care (as single patients) of incipient lunatics.

DR. SEYMOUR TUKE said that it would be well to have every house and every person taking patients duly registered; and, further, it would be advisable that no person should be granted such permission who cannot show that he or she has some knowledge and experience of insanity and its treatment. The existing system which permits (or winks at) any one who chooses to do so to take charge of patients of unsound mind is a scandal. Notification of certification should be the rule in all cases—every case should be brought under official cognizance.

DR. LIONEL WEATHERLY said that he had advocated for twenty years the view that supervision is as necessary in private houses receiving single patients as in public institutions. The great increase in recent years of the clandestine treatment of insanity in private care is a scandal, and he would welcome any legislation which provides for some supervision over these single cases. In very recent cases he feared some of our leading consultants were not altogether blameless.

DR. SHUTTLEWORTH opened a discussion on

## THE TREATMENT OF EPILEPTICS AND IMBECILES.

He said that there is at present no provision for sane epileptics in England. In the United States such provisions are afforded by the Craig Colony, New York, and by similar institutions. The system is generally that of detached cottages for housing the patients, and the buildings are spread over a large area. Workshops and gardens, orchards, farms, etc., are provided for teaching and training in useful occupations and industries. An institution of such a kind would be a boon to the country.

DR. FLETCHER BEACH referred to the medical aspects of the question. He spoke well of the alkaline bromids

and of strontium bromid. The addition of liquor strychninæ in suitable cases prevents spinal-cord depression. Workmen liable to fits should receive 60 grs. of bromid on going to bed. In syphilitic cases the addition of the alkaline iodids is indicated. Errors of ocular refraction should be corrected if present. Open-air occupation and a diet in which nitrogenous food (meat, eggs) is reduced to a minimum should be the rule. All epileptics should be advised not to marry—*emphatically*.

DR. LLOYD ANDRIEZEN referred to the importance of open-air occupation in farms and fields. The system of providing workshops not only for industrial training, but to make institutions for epileptics in a measure self-supporting is a step in the right direction. In the administration of bromids he had found the addition of a small quantity of syrup of the hypophosphites beneficial in averting muscular depression and feebleness of circulation. For several years he had tried a combination of antipyrin (5 gr.) and ammonium-bromid (15 gr.) in cases of epilepsy, and found it beneficial in preventing apathy and stupor which patients would otherwise exhibit, and in promoting a degree of mental brightness and clearness.

DR. HAIG contributed a few remarks on the value of non-nitrogenous diet in epilepsy. He recommended the total disuse of meat, eggs and tea, and proposed a system of diet free from uric acid, which substance he looked upon as the primary agent in producing attacks of headache and mental dulness and depression, and even epilepsy. The diet recommended consists of 10 ounces of bread per diem, 12 ounces of vegetables and fruit, and about 2 ounces each of oatmeal, rice, milk, and cheese. Macaroni, potatoes, etc., can be taken in proportion to the wants of hunger and labor; and those patients who have been accustomed to eat much meat may be given in addition small quantities of protein and gluten.

#### SECTION ON PHARMACOLOGY AND THERAPEUTICS.

DR. BURNEY YEO introduced the subject of

##### INTESTINAL ANTISEPTICS.

He stated that they should be used to antagonize the evil effects of toxic agents, or, in other words, to prevent auto-intoxication. The scientific basis for the use of antiseptics rests on our knowledge of bacteria. Our aim should be to render the bacteria non-virulent. Morbid conditions calling for the use of antiseptics are gastric dilatation, duodenal indigestion, summer diarrhea, and remote affections of other organs. Dr. Yeo dealt with the use of sterilized water, mercurials, chlorin, bismuth salts, and carbolic acid, but recommended more especially menthol, thymol, and other volatile substances which are not absorbed by the stomach. Salol cannot be relied upon. In a large number of cases irrigation is also desirable.

DR. HUGH WALSHAM read a paper, entitled

##### CASES TREATED WITH ERYTHROL TETRANITRATE.

He found its administration safest in the form of chocolate tablets. The patients treated were suffering from various forms of heart disease, from interstitial nephritis

and from Raynaud's disease. Success was obtained in nearly every instance.

The President remarked that he had frequently used the drug and that the danger of explosion, with ordinary precautions, might be neglected. He had known sleeplessness of Bright's disease to be relieved by a single dose.

#### SECTION ON LARYNGOLOGY AND RHINOLOGY.

A discussion on

##### THE DIAGNOSIS AND TREATMENT OF CHRONIC EMPYEMA OF THE FRONTAL SINUS

was opened on Thursday by MR. CHARTERS J. SYMONDS. He thought all were agreed upon two points: (1) The necessity for a free external opening in bad cases; (2) the usefulness of removing the anterior part of the middle turbinated body. Evidently, the weight of opinion favors intranasal methods. These may suffice for the simpler cases, but no force must ever be used. Opening the sinus from the nose is universally condemned as very dangerous. He does not attempt to remove all mucous membranes.

#### SECTION ON TROPICAL DISEASES.

DR. GEORGE THIN opened the discussion on

##### PSILOSIS OR SPRUE: ITS RELATIONS (ETIOLOGICAL AND PATHOLOGICAL) TO OTHER FORMS OF TROPICAL DIARRHEA, AND ITS TREATMENT.

He said that the disease is characterized by irregular and abnormal motions, there being, first, diarrhea, varying much in severity, frequency, and persistence; secondly, symptoms of disordered digestion, dyspepsia being always present; and, thirdly, progressive emaciation. He contested the opinion that sprue can arise in persons who have never been out of England. He drew attention to two types of the disease—one common in the Eastern Archipelago and the other common in India. In the former, mouth, tongue, and throat symptoms are prominent early; in the latter copious watery stools are the chief feature, and the mouth and tongue symptoms develop late or not at all. In the condition to which the term "white flux" or "diarrhea alba" is applied in India, mouth symptoms are usually synchronous with advanced malnutrition and emaciation. Dr. Thin said that of cases of sprue a third class develops in the Far East in elderly persons or in persons who have lived long in that region. Diarrhea is the initial sign, but very gradually the tongue grows raw and bare. A fourth class of cases is distinguishable in persons who have lived in the East and developed sprue after returning to reside in England. The pathology of sprue was summed up as a gradual atrophy of the organs of the body and a general emaciation. Atrophy of the mucous membrane of the stomach and intestine develops, and a sclerosis of the submucosa, but why the disease attacks the intestine is not known. Dr. Thin looked upon ulceration of the bowel as quite a secondary phenomenon. The etiology of sprue is unknown. It is associated with residence in certain parts of the world, and not in others. A specific poison, in all probability resident in the ileum, causes the disease.

DR. MANSON said that in his opinion sprue should be regarded not as one disease but as a variety of diseases, with a series of symptoms in common. In the tropics the abdominal organs are functionally very active, and suffer from subsequent exhaustion; hence their special liability to invasion by parasites and by various ailments. He regarded sprue in the tropics as pandemic, and had met with cases from the West Indies, India, and China. He recommended rest in bed, warmth, and simple diet. Milk and fruit (such as bananas) he held to be the staple diet, but considered that meat is indicated at times.

MR. JAMES CANTLIE read a paper on

#### SUPRAHEPATIC ABSCESS,

which he defined as a collection of pus between the layers of the broad ligament of the liver, having as boundaries the peritoneum circumferentially, the diaphragm above, and liver below. The affection is not preceded by hepatitis, dysentery, or any other abdominal ailment. It is characterized by sudden onset, symptoms of fever, cough, and some respiratory distress. When allowed to pursue its course, the pus usually finds its way through the diaphragm and lung to a bronchus, from which the purulent matter is expectorated. He believed the disease to be due to chill, which causes a lymphangitis of the channels between the layers of the broad ligament. Dysentery plays no part in the etiology of the suprahepatic abscess. The pus is sterile; in other words, the suprahepatic abscess is the "sterile pus abscess" concerning which so much discussion has taken place. Local evidence of the disease is met with in the region of the right nipple, where, immediately internal to the nipple line, the highest point of an inverted saucer-shaped or cup-shaped area of dulness exists. The immediately superimposed part of the right lung suffers a fleeting congestion, which tends to obscure the area of the outline of the abscess, and may lead to mistakes in diagnosis and delay in treatment. Mr. Cantlie recommended early exploration, and, when pus is found, tapping by a large trocar and cannula, and the introduction of a drainage-tube of the largest size, in the manner recommended by Dr. Manson.

#### THERMIC FEVER OR SIRIASIS,

which has evoked much discussion lately, was dealt with by COLONEL KENNETH MACLEOD. There is no proof that any microbe peculiar to the disease exists, and Giles has shown that the injection of blood taken from persons suffering from heat-fever is not followed by any specific pathological change. All the organs in tropical climates which are called into overaction by the influence of heat soon tend to become played out. Hepatic excitement is followed by hepatic exhaustion, and so it is with the power of resisting heat. Long exposure to heat lessens the power of accommodation of the heat centers, and accounts for the decrease in the power of old tropical residents to withstand prolonged heat.

DR. SAMBON said that heat alone can not cause siriasis, and that there are many arguments in favor of the disease being due to a microbe. Many of the leading

men in tropical pathology are favorable to such a conclusion, and Wood of Philadelphia has described a micro-organism.

MAJOR GILES, I.M.S., said that the geographical distribution of the disease argues in Dr. Sambon's favor. In proof of this he stated that the prevalence of sunstroke in many parts of the tropics is quite exceptional. As an example he cited the fact that troops in South Africa work in a temperature as high as in India, yet they are not subject to sunstroke.

DR. MANSON contended that though there is no direct proof that thermic fever is due to the toxic influences produced by a microbe, there is much in favor of such a theory. Microbes and parasites of many kinds develop only when a certain temperature is reached, and it seems, from a study of thermic fever, that at a certain given temperature a microbe is called into play which by its toxin produces the train of symptoms called siriasis.

A paper contributed by LIEUTENANT-COLONEL M'CARTIE, I.M.S., entitled

#### THE CAUSE AND PREVENTION OF HEAT APOPLEXY IN THE ARMY,

was read. The writer maintained that it is the uniform served out to the troops in India that is the main cause of the excess of sunstroke among them as compared with civilians. He showed that during an expedition the soldiers in their harassing and heavy uniform were knocked over by sunstroke while the coolies who accompanied them, although bearing heavier loads, did not suffer in the same manner. It is not only the amount of clothing, but its texture and its tight fit that places the soldier at a disadvantage. The coolies' clothing is loose and allows the skin free action so that there is a possibility of rapidly cooling the surface of the body.

SURGEON STALKART, R.N., read a paper on

#### BLACKWATER FEVER.

DR. SAMBON said that he considered blackwater fever to be a specific disease, that its malarial origin is improbable, and that both by its character and by its geographical distribution it presents all the features of a distinct disease. He entirely disagreed with Koch in his statement that it is the result of dosage by quinin.

DR. MANSON discussed the subject from a broad standpoint, and pointed out the arguments in favor of, and the arguments against the association of blackwater fever and malaria. Blackwater fever occurs in a limited geographical range; it does not occur at the season of the year in which malarial disease is most rife; the malarial parasite is not always found; and cases of blackwater fever have occurred within a short period after a tropical country has been reached, and before malaria could have acquired a marked hold on the system. On the other hand, blackwater fever occurs in highly malarial districts; the malarial parasites are often met with in the blood; the fever is most apt to occur in persons who have had many attacks of malarial fever and who have been exposed to the "climate" for three or more years.

CAPTAIN W. J. BUCHANAN, I.M.S., read a paper on



### DYSENTERY AS A TERMINAL SYMPTOM OF DISEASE IN THE TROPICS.

From observation of a large number of cases, twenty-eight of which were recorded in detail in the paper, he showed that dysentery is very apt to supervene a few weeks before death, and to carry off the patient.

DR. MANSON said that Captain Buchanan's paper illustrated the power of healthy organs to resist the pernicious action. When the restraining influences which prevail during health are removed, the disease has full scope.

COLONEL MACLEOD said that dysentery is a frequent precursor of death in leper and lunatic asylums in India. He believed that when once dysentery prevails to a considerable extent in a dwelling it becomes infected, and that the infection is very difficult to get rid of.

## REVIEWS.

**RESPIRATORY EXERCISES IN THE TREATMENT OF DISEASE**, notably of the heart, lungs, nervous and digestive systems. By HARRY CAMPBELL, M.D., B.S., London. Physician to the Northwest London Hospital, and to the Hospital for the Diseases of the Nervous System, Walbeck street. New York: William Wood & Co., 1899.

THE facts developed in this little volume may be summed up as follows: (1) there are several types of breathing—clavicular, lower costal, abdominal, etc.; (2) the character of the breathing determines a varying effect upon the circulation in the arteries, veins, and lymphatics in different parts of the body; (3) patients may be taught the exercise of the kinds of breathing, which, with or without passive motions and gymnastics of the trunk and extremities, are of value in the treatment of certain nervous, cardiac, and digestive disorders; (4) of special importance are respiratory exercises in the treatment of most chronic and some acute pulmonary lesions. In emphysema they maintain or restore pulmonary elasticity; in bronchitis and phthisis they determine salutary changes in blood-supply and blood-pressure.

The instructions for the employment of the exercises in these diseases are very meager; in fact we believe that the author has left out much that might have been said to good advantage.

**TRAITÉ DE MÉDECINE ET DE THÉRAPEUTIQUE PUBLIÉ.** Sous la direction de MM. P. BROUARDEL AND A. GELBERT. Tome VI. *Maladies du Cœur, des Arteres, de L'Aorte, des Veines, Du Systeme Lymphatique et Du Sang.* Paris: J. B. Bailliere et Fils, 1899.

MOST of the articles in this volume are by writers whose names are unfamiliar in America. The volume is, however, well up to the excellent standard that characterizes the preceding ones and is worthy of the ambitious purpose of the treatise to be a thoroughly up-to-date review of medicine.

The chapter on functional disorders of the heart is especially good. The digestive reflexes and the neurotic conditions generally that affect the heart rhythm, its rate

and intensity, are well brought out. There is an illustration of the increased size of the heart and dulness to percussion just after a heavy meal that is of itself a striking lesson in the possibilities of mechanical stomache interference with heart action.

Some of the French terms used in the book to describe the complications that develop in various organs as a consequence of a heart lesion are very picturesquely straightforward, for instance, the cardiac kidney, the cardiac liver, the cardiac stomach, the cardiac brain. They are impressive reminders of the complications so prone to occur in heart trouble, the real conditions that need treatment. Rupture of the heart is treated of at length. The accident is much more frequent than is usually supposed or could ever be imagined where autopsies are not made as a routine practice.

## THERAPEUTIC HINTS.

### Treatment of Variola.—

#### 1. Local treatment.

For pain and itching of the early stage:

℞	Ac. carbolicæ cryst.	} aa . . . . .	gr. xxx
	Iodi		
	Glycerini . . . . .		

M. Sig. Brush over eruption 3 or 4 times a day.

To prevent pitting:

℞	Ol. picis liquidæ	} aa . . . . .	ʒ i
	Vaselini carbolizat.		
	Lanolini . . . . .		

Mix thoroughly. Apply to exposed parts 3 times a day. An air-tight coating is formed, which also aids in relieving pruritus.

#### 2. General treatment.

For initial stage, give acetanilid, 1 to 5 grains every hour according to age of patient, to diminish temperature, induce perspiration, and help bring out eruption. Quinin is contraindicated as it does not lower temperature and does increase delirium. Mild purgatives are helpful. Diet: Milk, eggs.—*J. C. Slack.*

### Anesthetic and Hemostatic Solution for Dental Work.—

LEGRAND gives directions for the use of this solution which he states will render the extraction of teeth or roots entirely painless and prevent hemorrhage.

℞	Gelatini pur.	. . . . .	gr. xxx
	Sodii chloridi	. . . . .	gr. xii
	Ac. carbolicæ cryst.	. . . . .	gr. iss
	Cocainæ hydrochlor.	. . . . .	gr. v
	B.-eucain hydrochlor.	. . . . .	gr. xii
	Aq. dest.	. . . . .	q.s.ad. ʒ iii ʒ iii.

M. Sig. For hypodermic use.

Place a small tampon wet with the solution on the gum. In a few minutes begin to inject 6 to 10 minims of the warmed solution along both external and internal surfaces of the tooth. Insert the needle below the neck and pass it along toward the root, pressing in the needle as deeply as possible. Three minutes after completion of the injection the tooth can be pulled painlessly, and the blood which then fills the alveolar cavity will coagulate and prevent further loss of blood.